Gravina Access Project

Preliminary Quantities and Cost Estimate Technical Memorandum

Draft



Agreement 36893013 DOT&PF Project 67698 Federal Project ACHP-0922(5)

Prepared for:



State of Alaska Department of Transportation and Public Facilities 6860 Glacier Highway Juneau, Alaska 99801

> Prepared by: HDR Alaska Inc. 712 W. 12th Street Juneau, AK 99801

Executive Summary

Current Gravina Access Project costs are presented for access to the airport terminal and highway access to developable lands north of the airport. The cost resulting from access to developable land varies by alternative, largely depending on where each alternative makes landfall on Gravina and the distance to airport development land north of the airport.

The summary table titled future airport development identifies the cost associated with providing the airport with sufficient parking to meet the projected year 2025 parking demand. Although initial parking requirements could most likely be accommodated at the airport without construction of a parking garage under the current airport configuration additional parking will need to be added to the airport at some time in the future.

Airport Access			
	Alternative	Total Estimated Project Cost (\$ million)	Life Cycle Total Cost (\$ million)
	C3(a2)-200	160	133
200' Bridges	F3(2)-200	167	144.0
_	C4(a2)-200	171	142
120' Bridges	D1-120	102	86
12 Bric	C3(b)-120	153	129
	G2	58	99
Ferries	G3	46	85
	G4	35	74

Developable Land Access			
	Alternative	Total Estimated Project Cost (\$ million)	Life Cycle Total Cost (\$ million)
	C3(a2)-200	15	14
200' Bridges	F3(2)-200	10	9
_	C4(a2)-200	15.2	13
120' ridges	D1-120	14	15
12 ridş	C3(b)-120	14	13
	G2	0	0
Ferries	G3	10	12
	G4	15	17

Future Airport Development				
All Alternatives	All Alternatives Total Estimated Project Cost (\$ million) Life Cycle Total Cost (\$ million)			
Parking Garage	11	9		

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1.0 Introduction

The Gravina Access Project was commissioned in 1999 by ADOT&PF to study ways to improve access from Ketchikan on Revillagigedo Island to Gravina Island. Gravina Island is home to Ketchikan International Airport, as well as much of the developable land available within the Ketchikan area. This technical memorandum has developed estimated costs for comparison purposes for the reasonable alternatives. Cost estimates include not only the construction cost, but also program development and life cycle costs, including operation and maintenance costs.

2.0 Previous Cost Estimates

Earlier in this project in order to compare the initial alternatives, costs were developed in the late winter and early spring of 2000 for all alternatives. In this way, one alternative or mode was not unfairly compared with other alternatives or modes. The basis of cost comparison for the original list of alternatives was as follows:

- Major items were estimated through quantity calculations, such as earthwork, pavement, number of stream crossings, bridge deck area, foundation costs, ferry acquisition and terminal costs, and tunnel cost per linear meter.
- All other items were estimated based on a percentage of the major items.
- Unit prices applied were based on recent bid tabs or recent engineering estimates for similar projects, specifically, the Boston Harbor tunnel, the Benicia Martinez Bridge, the new airport ferry being built in Ketchikan, and the recently constructed 3rd Street project in Ketchikan

In addition to the construction costs, Program Development costs were calculated based on the total estimated construction cost. Program Development costs were initially defined as:

•	Miscellaneous Contingency	35%
•	Environmental Mitigation	10%
•	Engineering/Administration	8%
•	Construction Management	15%

Alignment specific right of way costs were also added to the total to determine the Program Development costs and the Total Estimated Project Cost for each option.

3.0 Initial Alternatives Cost Comparisons

In the earlier potion of the Gravina Access Project 18 alternatives were investigated, establishing engineering criteria, crossing concepts, summary of potential environmental impacts and costs, all for purposes of comparison of the alternatives. Engineering criteria established for the cost comparison included:

- Roadway cross-section included two travel lanes of 3.6m (11.8 ft.) and two shoulders of 2.5 m (8.2 ft) in width. Also included was a bike path of 2.4m (7.9 ft.) in width.
- Design speed was 90 KPH (55.9 MPH).
- Maximum grade was 6%.
- Cost estimates included access from Tongass Avenue to the airport terminal only.

Construction and Program Development Costs were established as presented below:

Alternative	Total Estimated Project Cost (\$ million)
A1	268.8
B1	384.9
C1	242.0
C2	205.3
C3	145.8
C4	152.5
D1	89.2
D2	248.7
E1	262.6
E2	350.2
F1	205.8
F1 (cable stayed)	210.9
F2	553.2
F3	181.6
G1	71.5
G2	66.2
G3	47.1
G4	42.7

Note: These costs were developed in January 2000.

4.0 Costs for the Reasonable Alternatives

Initial screening of the 18 alternatives resulted in identifying eight alternatives as reasonable for further study in this phase of the project. The reasonable alternatives have been refined to more accurately establish environmental impacts, and to review the project costs for comparison purposes. During that process, the following changes were made:

- The roadway width was reduced to remove the separate bike path, which narrowed the overall highway section by 2.6 meters. This resulted in a reduced lane mile cost for the roadway estimate.
- The roadway profile was adjusted to reflect a revised design speed for the alignment of 70 KPH (43.5 MPH). Maximum grade changed from 6% to 8% on the roadway and on approaches to the bridge alternatives.
- The unit costs for the bridge were adjusted to reflect the actual bids received on the Benicia Martinez Bridge a concrete box girder structure being built this fall. In addition costs for major civil construction on the west coast were reviewed and adjustments to the bridge components made to recognize the current market conditions. This has resulted in an increase in the bridge costs.
- Contingencies were adjusted to reflect the estimated risk by each major item. For example, the bridge foundation cannot be accurately estimated until site-specific geotechnical information is available. For that reason, that specific item has been assigned a 25% contingency.
- Mitigation contingency was changed to 2% of construction cost, capped at \$2 million.
- Construction Management is estimated at 11% of construction cost.
- Miscellaneous Roadway Items: An analysis was conducted of ADOT&PF bid tab summaries for 1995 to 1999, to establish relationships between the overall cost of roadway items and the cost of various miscellaneous items. Based on this analysis, three categories for miscellaneous roadway items were added to the cost estimate:

Removal Items
 Other Excavation & Emb.
 Miscellaneous Items
 at 6% of roadway costs
 at 3% of roadway costs
 at 25% of roadway costs

- Because of the item-specific contingency, and the miscellaneous roadway items
 described above, the overall project contingency has been reduced to 15%. This
 is lower than normal at this stage, but appropriate because of the use of item
 specific contingencies.
- The ferry acquisition cost has been reviewed and adjusted based on additional information available from the new airport ferry construction.
- The cost of an access road to developable lands north of the airport on Gravina Island has been estimated for all alternatives. This cost is identified in the cost analysis summary (attached) labeled *Development Access*. Also included in the updated cost is the cost of a parking garage for ultimate airport development. Because these portions of the project are not strictly necessary for access to the airport, they are shown as distinct items to the total program cost presented in the summary tables.

The cost review resulted in significant revisions to some of the costs for the alternatives included in the reasonable alternatives evaluation. The construction cost is used as the basis for the analysis of the economic impacts on the community. It is appropriate to utilize these costs for comparative evaluations of the different alternatives and helping

determine the recommended alternative. These costs are not accurate enough to utilize for budgeting purposes. In order to develop costs for budgeting purposes, additional information, including geotechnical, bathymetric and topographical information must be gathered and evaluated to establish with a higher degree of certainty the design concepts and quantities.

The following is a summary of the comparative costs for the Gravina Access Project reasonable alternatives. A detailed breakdown of construction quantities (based on preliminary engineering studies) and cost estimates (broken into the airport access and development access categories) can be found in the attachment. These costs have been combined by alternative for this summary. Also attached is a detailed breakdown of the operation and maintenance costs for each alternative. It also indicates the assumptions made about the types of periodic major maintenance or rehabilitation needed during the life of the project, and costs associated with that work.

Alternative	Total Estimated Project Cost (\$ million)
C3(a2)-200	186
C3(b)-120	178
C4(a2)-200	196
D1-120	127
F3(2)-200	188
G2	69
G3	67
G4	61

Note: Detailed breakdown is included in

The alternatives can be grouped into three basic groups; high bridge, (C3, C4, F3) low bridge, (D1, C3(b)) and ferries (G2, G3, G4). The magnitude of cost difference is useful in choosing between the alternatives. It should be noted additional fieldwork and preliminary design must be completed to develop an opinion of cost that is of adequate accuracy to be used for budgeting purposes.

5.0 Life Cycle Cost Comparison

For further comparison purposes, life cycle costs were prepared for comparative purposes. Life cycle cost analyses are often useful to evaluate the total cost of the project over its useful life, taking into consideration both program development costs as well as annual operation and maintenance costs, major rehabilitation required during the life of the project, and the value of money. The life cycle cost for this project used guidelines provided in Federal Highway Administration – Office of Management and Budget (OMB) Circular No. A-94, October 29, 1992 and subsequent appendices. A summary of the assumptions used in the analysis included:

- All pavements would have to be overlaid at 20 year intervals
- Mechanical/electrical equipment of ferries would have to be replaced every 25 years
- Ferry terminal maintenance would be required every 10 years
- The useful life of a bridge is 75 years
- The useful life of the parking structure is 75 years
- The useful life of a ferry is 50 years
- Long term inflation rate is 2%
- Long term interest rate is 6.3%

Annual costs of operation and maintenance were based on evaluation of comparable systems, such as the existing ferry system and maintenance of large concrete bridges. Based on the above assumptions, the following comparisons include life cycle costs of the alternatives.

5.1 **Definition of Life Cycle Cost**

Life Cycle Cost is defined as the overall estimated cost of a single project alternative over the life of the project or a defined period. All of the income and expenses associated with the project that occur during its life are used to calculate the life cycle cost. Comparing their life cycle costs is a common way to evaluate different alternatives. Life Cycle Costs will be compared here using Net Present Value (NPV). For the Gravina Access Project, present worth is used to compare the life cycle costs of different alternatives.

5.2 **Cash Flow**

A cash flow diagram is often used to show how money is spent and earned. A simple cash flow diagram is shown in Figure 1. In this figure, each vertical bar represents the net expense or income for a single year. A vertical bar below the \$0-line indicates that

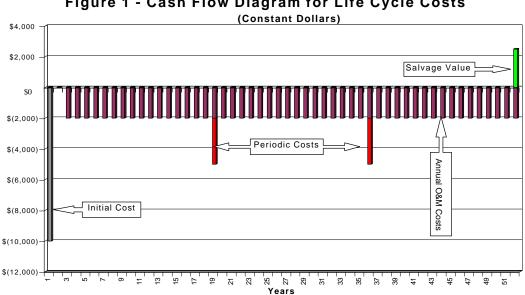


Figure 1 - Cash Flow Diagram for Life Cycle Costs

money is spent on the project and a bar above the \$0-line indicates that money is earned or gained. The cash flow includes initial costs, annual operating and maintenance (O&M) costs, periodic maintenance costs, and salvage values. "Constant dollars" are used in this diagram, which means that the income and expenses do not include the effects of inflation. Also, annual operating and maintenance costs actually occur throughout the year, but in this cash flow diagram they are shown as a lump sum at the end of the year. A cash flow diagram similar to this was used for Gravina Access Project alternatives. Using a car as an example, the following shows the components of a cash flow diagram.

Car Example 1: The cash flow diagram for an automobile paid in full on the day of purchase includes the following costs:

- The *initial cost* is the price that is paid for the vehicle and any taxes and fees paid at the time of purchase.
- Annual operating and maintenance costs include the annual cost of fuel, oil, fluids, insurance and other costs that occur every year.
- Periodic maintenance costs include new tires, new brakes, new batteries and other maintenance costs that occur throughout the life of the vehicle to keep the vehicle in service.
- The *salvage value* is the price that the vehicle is sold for at the end of its useful life.

Time Value of Money

When dealing with money or finances for a project over a long period, the time value of money must be considered. The value of money changes over time due to inflation and interest rates.

Inflation decreases the value of money over time by increasing the cost of goods and services. When we say, "A dollar today isn't worth what it used to be," we are usually referring to the loss in a dollar's value due to inflation. If we have \$100 dollars to buy an item today, the same item 50 years ago would have cost \$37, assuming a 2% inflation rate. Similarly, an item that costs \$100 in the Year 2000 will cost about \$270 in the Year 2050 at a 2% inflation rate.

Interest accrued over time increases the value of money. Another way to think about this is that you can "make money" with the money you have in hand today. For example, suppose you put \$10 into a bank account that pays 6.3% annual interest. If you leave the account alone and let that original \$10 and the interest accumulate, it will be worth \$212 in 50 years.

Because the value of money changes over time, it is very important to specify the year that the dollars are stated in. In the previous example, the \$100 price for the item is stated in Year 2000 dollars. When inflation is used to calculate the future cost, the \$270 price is in Year 2050 dollars.

5.3 Present Worth

Inflation and interest rates are combined to determine the *present worth* of an item. First, we assume that the price of the item purchased today is known. Second, an inflation rate is used to determine the future cost. The interest rate is used to determine how much money would have to be set aside today to pay for the item in the future. Together these factors determine the present worth of the item. Figure 2 shows the simplified cash flow diagram from Figure 1, but with the effects of inflation.

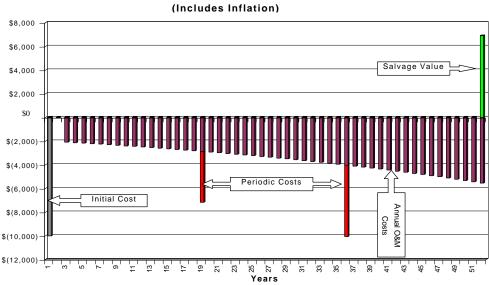


Figure 2 - Cash Flow Diagram for Life Cycle Costs

The equation for calculating the future cost for an item is:

Future Cost = Present Cost x
$$(1 + inflation rate)^t$$
 where t = number of years.

The present worth of a future transaction is:

Car Example 2: You decide that you want to purchase a new vehicle in 5 years. The 2000 model is currently selling for \$20,000 (in Year 2000 dollars). With 2% inflation you can assume that when you buy the new 2005 model it is going to cost \$22,082 (in Year 2005 dollars). Today, if you deposit \$16,269 (Year 2000 dollars) in an account that generates 6.3% interest and the account balance is allowed to accumulate, you would have

enough money for the new vehicle in 5 years. \$16,269 (in Year 2000 dollars) is the present worth of the 2005 model.

The associated calculations are:

Future Cost =
$$$20,000 \times (1 + 0.02)^5 = $22,082$$

Present Worth = $$22,082 \times (1 + 0.063)^{-5} = $16,269$

5.4 Salvage Value

The salvage value is the value of an item at the end of the life span. The straight-line method of depreciation is the method that is used to determine the salvage value for this project. This method states the value of an item decreases in value at a constant rate until it reaches the end of its life span, at which point in time the value of the item is zero. Hence, when the item is halfway through the life span, the item is worth half of its original price. When the item is 75% through its life, its salvage value is 25% of its original price.

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Salvage Value = Cost of Item x (1 - n / Life of Item)
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where n = the time at which the salvage value is calculated.

Car Example 3: An item is purchased for \$1,000. It has a life span of 50 years and zero salvage value at the end of its life. If you sold the item in 20 years the salvage value of the item would be \$600.

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Calculations:
Salvage Value in 20 years = $1,000 \times (1 - 20 / 50) = $600
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In the example above, a salvage value is calculated for an item that is purchased and sold. There is also salvage value associated with periodic maintenance. An item is worth more if it is maintained. The value of the maintenance performed is greater immediately after it is maintained and the value diminishes as you get closer to the next required maintenance. The straight-line method of depreciation described above is also used to determine the salvage value of periodic maintenance.

Car Example 4: You own an old car in desperate need of a new engine. The cost of purchasing and installing a new engine is \$5,000. The engine must be replaced every 15 years. If the car is sold 5 years after the engine is replaced, the salvage value the new engine adds to the value of the car is \$3,333.

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Calculations:
Periodic Maintenance Cost = $5,000
Salvage Value in 5 years = $5,000 \times (1 - 5/15) = $3,333
```

6.0 Calculating Life Cycle Costs for Gravina Access Project

Life cycle costs for the Gravina Access Project alternatives were determined using the present worth value for the Life Cycle Cost analysis. Because construction is scheduled to start in the Year 2003, the life cycle costs for all alternatives were computed in Year 2003 dollars.

The calculations were performed using a cash flow diagram in constant 2003. For example, repaving of the roadways is planned to occur once every 20 years at a cost of \$13 per square meter (2003 dollars). This means that at Years 2026, 2046, 2066, etc., an expense of \$13 per square meter will be included as a project expense. Present worth is calculated using a nominal interest rate of 6.3% and an inflation rate of 2% for all alternatives. ¹

Alternative	Total Estimated Project Cost (\$ million)	Total Life Cycle Cost (\$ million)	Annual Average O&M Cost* (\$ million)
A1	268.8	261.1	0.18
B1	384.9	372.4	0.17
C1	242.0	235.0	0.15
C2	205.3	199.8	0.15
C3	145.8	142.7	0.16
C4	152.5	149.1	0.15
D1	89.2	87.8	0.12
D2	248.7	246.6	0.44
E1	262.6	311.1	3.03
E2	350.2	397.2	3.12
F1	205.8	201.2	0.21
F1 (cable)	210.9	207.9	0.30
F2	553.2	594.6	3.26
F3	181.6	177.9	0.21
G1	71.5	155.8	4.99
G2	66.2	150.4	4.97
G3	47.1	131.9	4.95
G4	42.7	127.6	4.95

^{*}Includes annual O&M cost as well as annual contribution to fund periodic maintenance rehabilitation costs

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¹ Federal Highway Administration – Office of management and Budget (OMB) Circular No. A-94, Appendix C. January 2000.

The same evaluation period was used for all alternatives so that the comparison between alternatives is fair. The project period used for this evaluation is 20 years. Hence, for the Gravina Access Project, the 20-year life span starts at the beginning of Year 2006 and terminates at the end of 2025.

Alternative	Total Estimate Project Cost (\$ million)	Total Life Cycle Costs (\$ million)	Annual Average O&M Costs* (\$ million)
C3(a2)-200	186	156	0.18
C3(b)-120	178	151	0.18
C4(a2)-200	196	168	0.18
D1-120	127	110	0.16
F3(2)-200	188	160	0.27
G2	69	108	4.50
G3	67	106	4.99
G4	61	100	4.46

^{*} Includes annual O&M cost as well as annual contribution to fund periodic maintenance rehabilitation costs

As is commonly done in life cycle cost studies, the salvage value at the end of the project life span for structures such as bridges and tunnels is established using a straight-line method of depreciation, based on the life of the structure.

Initial Cost of Construction: Construction is expected to begin in 2003 and to last for approximately three years. The initial cost of construction and project development was distributed over the construction period and occurs at the beginning of the year (2003 to 2005). Construction is expected to be complete at the end of 2005.

Annual Operating and Maintenance Costs: Annual costs are lumped at the end of the year beginning at the end of 2006 (beginning of 2007) and the final cost occurs at the end of 2025 (beginning of 2026).

Periodic Maintenance Costs: Periodic maintenance costs include repaving, mechanical/ electrical equipment replacement, and terminal maintenance. Each of these maintenance items occurs at its respective frequency **f**. The first cost occurs **f** years after the beginning of 2006. Salvage value of the periodic maintenance costs after the 20th year is determined using the straight-line method of depreciation.

Structure Options: The proposed bridges have an expected life of 75 years. Salvage value for bridges after the 20th year is determined using the straight-line method of depreciation.

Ferry Options: It was assumed that with proper maintenance, the useful life of the proposed ferry vessels is 50 years. It was assumed that the ferry vessel has zero salvage value at the end of its 50-year life. It was assumed that one of the existing ferry vessels will be replaced at the beginning of the project life in 2006 and that the other existing ferry vessel will be replaced at the 10th year of the project life. The salvage value of all the ferry vessels at the end of the 20-year project life was calculated using the straight-line method of depreciation.

6.1 Summary of Alternatives and their Cash Flow Components (in constant Year 2003 dollars)

Bridge alternatives

- > Initial Cost of Construction
- > Annual Operating and Maintenance Costs
- > Periodic Maintenance Costs:
 - Repaying
- Salvage Value
 - Value of periodic maintenance costs after the 20th year.
 - Value of bridges after the 20th year

Moveable Bridge alternatives

- ➤ Initial Cost of Construction
- > Annual Operating and Maintenance Costs
- > Periodic Maintenance Costs:
 - Repaying
 - Electrical equipment replacement on moveable bridges
- > Salvage Value
 - Value of periodic maintenance costs after the 20th year.
 - Value of bridges after the 20th year

Ferry alternatives

- > Initial Cost of Construction
 - Construction
 - Ferry system acquisition
- > Annual Operating and Maintenance Costs
- > Periodic Maintenance Costs:
 - Repaying
 - Marine terminal fender/dolphin replacement cost
 - Ferry main propulsion and generator replacement costs
 - Existing ferry replacement at the 10th year
 - Salvage value
 - Value of periodic maintenance costs after the 20th year.
 - Value of vessel after the 20th year.

ATTACHMENT Cost Estimates

GRAVINA ACCESS PROJECT	OPTION :	C3(a2)	- Airport Acce	<u> </u>		
		200' B	RIDGE CLEAR	IDGE CLEARANCE		
Width Cleaning & Cambbing (m) We	1/15/2002 14:58 = 35		Boodway (m)			Pa
Width Clearing & Grubbing (m) - Wc = Unit Weight Asphalt (Megagram/m) - Wa =	= 1.50	0+000	Roadway (m) = 0+000	0		
Unit Weight Aggregate Base Course (Megagram/m) - Wb =	= 4.30	11+500	11+768	268		
Unit Weight Borrow (Megagram/m) - Ws	= 23.30	13+503	14+372	869		
Length Culvert Crossings (m) - Lc	= 40	0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr	= <u>14.6</u>	0+000	0+000	0		
Width of Right of Way (m) - Wr	= 50		ing Bridges (m)	0		
Contingency Line O (%) - Co = CONCEPT COST ESTIMATE	<u>15.0%</u>	Length Roa	d - Bridges (m) =	1137		
CONCEFT COST ESTIMATE			#Tunnels = 0			
		# Culv	vert Crossings = 9			
			eek Crossings = 0			
						TOTAL
	<u>UNITS</u>	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM CO
A EARTHWORK	THE COLUMN DEC	#11.000		* * * * * * * * * * * *	7 00/	\$46.000
1. Clearing and Grubbing 2. Rock Excavation	HECTARES CUBIC METER	\$11,000 \$13	135000	\$44,000 \$1,755,000	5.0% 25.0%	\$46,000 \$2,194,00
2. Rock Excavation 3. Borrow	MEGAGRAM	\$13 \$12	26493	\$318,000	10.0%	\$2,194,00
	MEGAGRAM	912	20493	\$310,000	10.0 /0	φ330,000
3 SURFACING / PAVING						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45 \$24	1706	\$77,000	2.5%	\$79,000
2. Aggregate Base Course	MEGAGRAM	\$24	4890	\$117,000	5.0%	\$123,000
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	103	\$20,600	1.0%	\$21,000
STRUCTURES						_
1. Bridges (See above for number)	0000					4.5
a. Superstructure.	SQUARE METER	<u>\$2,133</u>	25,331	\$54,031,000	10.0%	\$59,434,00
b. Substructure	I IIMD CANA	¢0.027.620	1	\$0.020.000	25.00/	¢11.207.0
i. Deep Water ii. Shallow Water	LUMP SUM SQUARE METER	\$9,027,638 \$1,615	6,910	\$9,028,000 \$11,160,000	25.0% 25.0%	\$11,285,0 \$13,950,0
iii. Over Land	SQUARE METER	\$1,076	12,491	\$13,440,000	25.0%	\$15,950,00
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
DRAINAGE						
Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$0	0.0%	\$0
3. Other Drainage	SQUILL METER	Ψ3.0	-	φυ	01070	Ψ
a. Development Access	METER	\$100	0	\$0	15.0%	\$0
b. Airport Access	METER	\$100	1137	\$114,000	15.0%	\$131,000
E TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
		7-2-3,000	_	,,		7,
F MISCELLANEOUS ROADS	LUMBCUM	\$181,500		\$182,000	10.0%	\$200,000
Connection to Airport Connection to Ketchikan	LUMP SUM LUMP SUM	\$181,500	1	\$182,000	10.0%	\$133,000
	LUMI SUM	\$121,000	1	\$121,000	10.0 /0	
G SUB TOTAL (Lines A, B, D through F)						\$3,734,00
I MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$224,040	<u>1</u>	\$224,000		\$224,000
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$112,020	1	\$112,000		\$112,000
		. ,.==		. ,		,-,-
3. <u>Miscellanceous Construction Items</u> (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control						
devices, lighting/load centers, etc.)	LUMP SUM	\$933,500	1	\$934,000		\$934,000
		,	-	,000		
SUB TOTAL (Lines G through H)						\$5,004,00
FERRY TERMINAL						
1. Passenger Shelter & Ticket Booth	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
SUB TOTAL (Lines A through F, H & J)						\$106,473,0
MOBILIZATION (10% of Line K)	LUMP SUM	\$10,647,300	1	\$10,647,000		\$10,647,00
Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
SUB TOTAL (Lines K through M)		1	+			\$117,120,0
		***		*****		
CONTINGENCIES (15% of Lines N)	LUMP SUM	\$17,568,000	1	\$17,568,000		\$17,568,00
MITIGATION (2% of Line N)	LUMP SUM	\$2,342,400	1	\$2,000,000		\$2,000,00
ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$9,369,600	1	\$9,370,000		\$9,370,00
CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$12,883,200	1	\$12,883,000		\$12,883,00
The state of the s					i l	
RIGHT OF WAY	HECTARE	\$230,000	4.4	\$1,012,000		\$1,012,00

GRAVINA ACCESS PROJECT	OPTION :	C3(a2)	- Developmen			
		200' B	RIDGE CLEAR	RANCE		
Width Cleaning & Curkking (m) Wo	1/15/2002 14:58 = 35		Poodway (m)			Pa
Width Clearing & Grubbing (m) - Wc Unit Weight Asphalt (Megagram/m) - Wa	= 35	10+000	Roadway (m) =	1500		
Unit Weight Aggregate Base Course (Megagram/m) - Wb	= 4.30	0+000	0+000	0		
Unit Weight Borrow (Megagram/m) - Ws	= 23.30	0+000	0+000	0		
Length Culvert Crossings (m) - Lc	= 40	<u>15+325</u>	<u>19+000</u>	3675		
Width Creek Crossing Bridge (m) - Wbr	= <u>14.6</u>	<u>0+000</u>	<u>0+000</u>	0		
Width of Right of Way (m) - Wr	= 50		ing Bridges (m)	= <u>0</u>		
Contingency Line O (%) - Co CONCEPT COST ESTIMATE	= 15.0%	Length Roa	# Bridges =	5175		
CONCEFT COST ESTIMATE			#Tunnels =	1		
		# Culy	vert Crossings =			
			eek Crossings =)		
						TOTAL
	<u>UNITS</u>	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM CO
A EARTHWORK	TTE COT A DEC	#11.000	10.2	\$200.000	7 00/	\$210.000
Clearing and Grubbing Rock Excavation	HECTARES CUBIC METER	\$11,000 \$13	18.2 222000	\$200,000 \$2,886,000	5.0% 25.0%	\$210,000 \$3,600,00
2. Rock Excavation 3. Borrow	MEGAGRAM	\$13 \$12	120578	\$1,447,000	10.0%	\$3,600,00
	MEGAGRAM	912	120376	\$1,447,000	10.0 /6	\$1,392,00
3 SURFACING / PAVING	Amou on the	4.7		42.00.000	2.70	
1. Asphalt Concrete Pavement	MEGAGRAM	\$45 \$24	7763	\$349,000 \$534,000	2.5%	\$358,000
Aggregate Base Course Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM MEGAGRAM	\$24 \$200	22253 466	\$534,000 \$93,200	5.0% 1.0%	\$561,000 \$94,000
	MEGAGKAM	⊅ ∠UU	400	\$75,400	1.0%	₹ 94,000
STRUCTURES						
1. Bridges (See above for number)	GOVIANT TERM	4.0		4.0	10.004	**
a. Superstructure.	SQUARE METER	<u>\$0</u>	0	\$0	10.0%	\$0
b. Substructure i. Deep Water	LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water	SQUARE METER	\$1,615	0	\$0	25.0%	\$0 \$0
iii. Over Land	SQUARE METER	\$1,076	0	\$0	25.0%	\$0 \$0
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
DRAINAGE						
Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$0	0.0%	\$0
3. Other Drainage						
a. Development Access	METER	\$100	5175	\$518,000	15.0%	\$596,000
b. Airport Access	METER	\$100	0	\$0	15.0%	\$0
E TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
		,		,,		, ,
F MISCELLANEOUS ROADS 1. Connection to Airport	LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0 \$0
	Denia sem	\$121,000		Ψ.0	101070	
G SUB TOTAL (Lines A, B, D through F)						\$7,468,00
I MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$448,080	<u>1</u>	\$448,000		\$448,000
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$224,040	1	\$224,000		\$224,000
3. <u>Miscellanceous Construction Items</u> (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control						
devices, lighting/load centers, etc.)	LUMP SUM	\$1,867,000	1	\$1,867,000		\$1,867,00
		. ,	_	, ,		
I SUB TOTAL (Lines G through H)						\$10,007,00
J FERRY TERMINAL						_
1. Passenger Shelter & Ticket Booth	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
SUB TOTAL (Lines A through F, H & J)						\$10,007,00
MOBILIZATION (10% of Line K)	LUMP SUM	\$1,000,700	1	\$1,001,000		\$1,001,00
				. , ,		
Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	0	\$0	0.0%	\$0
N SUB TOTAL (Lines K through M)						\$11,008,00
	V V D CT CT CT	A4 281 200		A4 (=1 000		
CONTINGENCIES (15% of Lines N)	LUMP SUM	\$1,651,200	1	\$1,651,000		\$1,651,00
MITIGATION (2% of Line N)	LUMP SUM	\$220,160	1	\$220,000		\$220,000
ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$880,640	1	\$881,000		\$881,000
CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$1,651,200	1	\$1,651,000		\$1,651,00
RIGHT OF WAY	HECTARE	\$0	25.9	\$0		\$0

GRAVINA ACCESS PROJECT	OPTION	C3(b)	- Airport Acce			
		120' B	RIDGE CLEAR	RANCE		
		120 B	RID GE CELEIT	IIICE		
	1/15/2002 14:58					Pa
Width Clearing & Grubbing (m) - Wc	= <u>35</u>		Roadway (m)			
Unit Weight Asphalt (Megagram/m) - Wa	= 1.50	0+000	0+000	0		
Unit Weight Aggregate Base Course (Megagram/m) - Wb	= 4.30	11+500	12+239	739		
Unit Weight Borrow (Megagram/m) - Ws	= 23.30	13+536	14+361	825		
Length Culvert Crossings (m) - Lc Width Creek Crossing Bridge (m) - Wbr	= <u>40</u> = 14.6	0+000 0+000	0+000 0+000	0		
Width Creek Crossing Bridge (m) - Wbr	= <u>14.6</u> = 50		ing Bridges (m) =	200		
Contingency Line O (%) - Co	= 15.0%			1364		
CONCEPT COST ESTIMATE	15.0 / 0	Length Roa	# Bridges = 1	1304		
CONCERT COST ESTEMATE			#Tunnels = 0			
		# Culy	vert Crossings = 9			
			eek Crossings = 0			
						TOTAL
	UNITS	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM CO
EARTHWORK						
1. Clearing and Grubbing	HECTARES	\$11,000	4.8	\$53,000	5.0%	\$56,000
2. Rock Excavation	CUBIC METER	\$13	97000	\$1,261,000	25.0%	\$1,576,00
3. Borrow	MEGAGRAM	\$12	31782	\$381,000	10.0%	\$419,000
CUDEACING / DAVING						
SURFACING / PAVING	MECACDAM	0.45	2046	¢02.000	2.50/	¢04.000
1. Asphalt Concrete Pavement	MEGAGRAM	\$45 \$24	2046	\$92,000 \$141,000	2.5%	\$94,000
2. Aggregate Base Course	MEGAGRAM	\$24	5866	\$141,000	5.0%	\$148,000
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	123	\$24,600	1.0%	\$25,000
STRUCTURES						
1. Bridges (See above for number)						
a. Superstructure.	SQUARE METER	\$2,276	18,936	\$43,098,000	10.0%	\$47,408,0
b. Substructure						
i. Deep Water	LUMP SUM	\$16,410,000	<u>1</u>	\$16,410,000	25.0%	\$20,513,0
ii. Shallow Water	SQUARE METER	\$1,615	7,756	\$12,526,000	25.0%	\$15,658,0
iii. Over Land	SQUARE METER	\$1,076	5,680	\$6,112,000	25.0%	\$7,640,00
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
DDANAGE						
D DRAINAGE	Memer	\$500	260	\$100.000	17.00/	\$20 7 000
1. Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	2920	\$2,832,000	0.0%	\$2,832,00
3. Other Drainage	METER	\$100	0	\$0	15.0%	\$0
a. Development Access b. Airport Access	METER	\$100 \$100	1364	\$136,000	15.0%	\$156,000
		\$100	1304		15.076	\$150,000
TRAFFIC SERVICES	LUMP SUM	\$250,000	<u>1</u>	\$250,000	0.0%	\$250,000
F MISCELLANEOUS ROADS						
Connection to Airport	LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	1	\$121,000	10.0%	\$133,000
	Ecini Scini	Ψ121,000	-	Ψ121,000	10.070	
SUB TOTAL (Lines A, B, D through F)						\$5,896,00
I MISCELLANEOUS ROADWAY ITEMS						
Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$353,760	1	\$354,000		\$354,000
	ECHI SCHI	φ353,700		ψ55-1,000		ψ55-1,000
Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$176,880	1	\$177,000		\$177,000
0.15 11 0.00 12 12 0.50 0.51 0.5						
3. <u>Miscellanceous Construction Items</u> (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control	¥ ¥13 450 0777 7			da 4=4 000		d= 4=
devices, lighting/load centers, etc.)	LUMP SUM	\$1,474,000	1	\$1,474,000		\$1,474,00
SUB TOTAL (Lines G through H)						\$7,901,00
FEED WITTEN AND A						
FERRY TERMINAL	SOUARE METER	do.	•	¢α	0.00/	φA
Passenger Shelter & Ticket Booth Earthworks, Surfacing, Paving		<u>\$0</u>	0	\$0 \$0	0.0%	\$0
, , , , , , , , , , , , , , , , , , , ,	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
SUB TOTAL (Lines A through F, H & J)			T.			\$99,120,00
MOBILIZATION (10% of Line K)	LUMP SUM	\$9,912,000	1	\$9,912,000		\$9,912,00
I Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	0	\$0	0.0%	\$0
SUB TOTAL (Lines K through M)	 		H		1	\$109,032,0
TOTAL (Ellics & ullough M)						φ±UZ,UZ4,U
CONTINGENCIES (15% of Lines N)	LUMP SUM	\$16,354,800	1	\$16,355,000		\$16,355,0
MITIGATION (2% of Line N)	I IIMD CIIM	\$2 180 240	1	\$2,000,000		\$2,000,00
WILLION (270 OF LIRE IN)	LUMP SUM	\$2,180,640	1	\$4,000,000		∌ ∠,000,00
ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$8,722,560	1	\$8,723,000		\$8,723,00
CONSTRUCTION MANAGEMENT (110/ -£1 : N)	I IIMD CIM		1	\$16 255 000		\$14 255 A
CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$16,354,800	1	\$16,355,000		\$16,355,00
RIGHT OF WAY	HECTARE	\$246,000	4.1	\$1,009,000		\$1,009,00

GRAVINA ACCESS PROJECT	OPTION :	C3(b)	- Development			
		120' B	RIDGE CLEAF	RANCE		
Width Cleaning & Cambbing (m) We	1/15/2002 14:58 = 35		Boodway (m)			Pa
Width Clearing & Grubbing (m) - Wc = Unit Weight Asphalt (Megagram/m) - Wa =	= 35	10+000	Roadway (m) =	1500		
Unit Weight Aggregate Base Course (Megagram/m) - Wb =	= 4.30	0+000	0+000	0		
Unit Weight Borrow (Megagram/m) - Ws	= 23.30	0+000	0+000	0		
Length Culvert Crossings (m) - Lc	= 40	15+325	19+000	3675		
Width Creek Crossing Bridge (m) - Wbr	= <u>14.6</u>	0+000	0+000	0		
Width of Right of Way (m) - Wr	= 50		ng Bridges (m)	= 0		
Contingency Line O (%) - Co = CONCEPT COST ESTIMATE	= <u>15.0%</u>	Length Koa	# Bridges (m) =	= 5175		
CONCELLCOSTESTIMATE			#Tunnels =)		
		# Culv	vert Crossings = 9)		
			eek Crossings =)		
						TOTAL
	<u>UNITS</u>	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM CO
A EARTHWORK	WEGE A DEG	411.000	40.2	\$200.000	7 00/	\$210.000
Clearing and Grubbing Rock Excavation	HECTARES CUBIC METER	\$11,000 \$13	18.2 191000	\$200,000 \$2,483,000	5.0% 25.0%	\$210,000 \$3,104,00
2. Rock Excavation 3. Borrow	MEGAGRAM	\$13 \$12	120578	\$1,447,000	10.0%	\$3,104,00
	MEGAGRAM	φ12	120376	\$1,447,000	10.0 /6	\$1,392,00
3 SURFACING / PAVING						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45 \$24	7763	\$349,000 \$534,000	2.5%	\$358,000
Aggregate Base Course Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM MEGAGRAM	\$24 \$200	22253 466	\$534,000 \$93,200	5.0% 1.0%	\$561,000 \$94,000
	MEGAGRAM	\$200	400	\$95,200	1.0%	\$ 94,000
STRUCTURES						
1. Bridges (See above for number)	GOVI DE SERVE	400		**	10.004	**
a. Superstructure.	SQUARE METER	<u>\$0</u>	0	\$0	10.0%	\$0
b. Substructure i. Deep Water	LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water	SQUARE METER	\$1,615	0	\$0	25.0%	\$0 \$0
iii. Over Land	SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
DRAINAGE						
Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$0	0.0%	\$0
3. Other Drainage	o Quinta in ETER	φεισ	-	Ψ0	0.070	Ψ.0
a. Development Access	METER	\$100	5175	\$518,000	15.0%	\$596,000
b. Airport Access	METER	\$100	0	\$0	15.0%	\$0
E TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
	Ecili Sciii	Ψ220,000	-	Ψ220,000	0.070	Ψ250,000
F MISCELLANEOUS ROADS	V V V V C C V V V C	A101 700		do.	10.00/	40
Connection to Airport Connection to Ketchikan	LUMP SUM LUMP SUM	\$181,500 \$121,000	0	\$0 \$0	10.0%	\$0 \$0
	LUMIF SUM	\$121,000	<u>U</u>	φU	10.076	
SUB TOTAL (Lines A, B, D through F)						\$6,972,00
I MISCELLANEOUS ROADWAY ITEMS						
Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$418,320	<u>1</u>	\$418,000		\$418,000
2. Other Excavation and Embankment Construction (3% of			_			
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$209,160	1	\$209,000		\$209,000
			-	7202,000		# = 07,000
3. <u>Miscellanceous Construction Items</u> (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control						
devices, lighting/load centers, etc.)	LUMP SUM	\$1,743,000	1	\$1,743,000		\$1,743,00
	Zemi bem	Ψ 2 ,7 3 2,000	-	ψ1,7 13,000		
SUB TOTAL (Lines G through H)				-		\$9,342,00
FERRY TERMINAL						
1. Passenger Shelter & Ticket Booth	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
SUB TOTAL (Lines A through F, H & J)				1		\$9,342,00
	I IIMD CANA	¢024 200	1	¢024 000		
MOBILIZATION (10% of Line K)	LUMP SUM	\$934,200	1	\$934,000		\$934,000
Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
SUB TOTAL (Lines K through M)	+	+	+ +	+		\$10,276,00
				1		
CONTINGENCIES (15% of Lines N)	LUMP SUM	\$1,541,400	1	\$1,541,000		\$1,541,00
MITIGATION (2% of Line N)	LUMP SUM	\$205,520	1	\$206,000		\$206,000
ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$822,080	1	\$822,000		\$822,000
CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$1,541,400	1	\$1,541,000		\$1,541,00
1	1	4.0		40	+	4.0
RIGHT OF WAY	HECTARE	\$0	25.9	\$0		\$0

GRAVINA ACCESS PROJECT	OPTION	C4(a2)	- Airport Acce	SS		
		200' B	RIDGE CLEAR	RANCE		
	1/15/0000 11/50					
Width Clearing & Grubbing (m) - Wc	1/15/2002 14:58 = 35		Roadway (m) =			Pa
Unit Weight Asphalt (Megagram/m) - Wa	= 35	0+000	0+000	0		
Unit Weight Aggregate Base Course (Megagram/m) - Wb	= 4.30	11+500	11+768	268		
Unit Weight Borrow (Megagram/m) - Ws	= 23.30	<u>13+288</u>	<u>14+133</u>	845		
Length Culvert Crossings (m) - Lc	= 40	0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr	= <u>14.6</u>	<u>0+000</u>	0+000	0		
Width of Right of Way (m) - Wr	= 50		ing Bridges (m)	<u>0</u>		
Contingency Line O (%) - Co	= <u>15.0%</u>	Length Roa		1113		
CONCEPT COST ESTIMATE			# Bridges = 1 #Tunnels = 0			
		# Culs	vert Crossings = 9	1		
			eek Crossings = 0)		
						TOTAL
	<u>UNITS</u>	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM CO
A EARTHWORK						
1. Clearing and Grubbing	HECTARES	\$11,000	3.9	\$43,000	5.0%	\$45,000
2. Rock Excavation	CUBIC METER	\$13	<u>541000</u>	\$7,033,000	25.0%	\$8,791,00
3. Borrow	MEGAGRAM	\$12	25933	\$311,000	10.0%	\$342,000
SURFACING / PAVING						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	1670	\$75,000	2.5%	\$77,000
2. Aggregate Base Course	MEGAGRAM	\$24	4786	\$115,000	5.0%	\$121,000
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	101	\$20,200	1.0%	\$20,000
STRUCTURES		1				
Bridges (See above for number)		1				
a. Superstructure.	SQUARE METER	<u>\$2,134</u>	22,192	\$47,358,000	10.0%	\$52,094,00
b. Substructure						
i. Deep Water	LUMP SUM	\$14,700,000	1	\$14,700,000	25.0%	\$18,375,0
ii. Shallow Water	SQUARE METER	\$1,615	<u>6,740</u>	\$10,885,000	25.0%	\$13,606,0
iii. Over Land	SQUARE METER	\$1,076	9,690	\$10,426,000	25.0%	\$13,033,00
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	<u>0</u>	\$0	0.0%	\$0
DRAINAGE						
Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$0	0.0%	\$0
3. Other Drainage	MEGER	\$100		do	17.00/	Φ0
a. Development Access b. Airport Access	METER METER	\$100 \$100	0 1113	\$0 \$111,000	15.0% 15.0%	\$0 \$128,000
			1113			
E TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
MISCELLANEOUS ROADS						
1. Connection to Airport	LUMP SUM	\$181,500	<u>1</u>	\$182,000	10.0%	\$200,000
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0
SUB TOTAL (Lines A, B, D through F)						\$10,181,00
						φ10,101,0
I MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement,	* *** **	4610.060		444.000		A<14.00
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$610,860	1	\$611,000		\$611,000
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$305,430	1	\$305,000		\$305,000
3. Miscellanceous Construction Items (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control						
devices, lighting/load centers, etc.)	LUMP SUM	\$2,545,250	1	\$2,545,000		\$2,545,00
SUB TOTAL (Lines G through H)		1			1	\$13,642,0
, , ,						φ13,042,00
I FERRY TERMINAL						
1. Passenger Shelter & Ticket Booth	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
SUB TOTAL (Lines A through F, H & J)						\$110,750,0
MOBILIZATION (10% of Line K)	LUMP SUM	\$11,075,000	1	\$11,075,000		\$11,075,0
		. , ,			0.007	
Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	0	\$0	0.0%	\$0
SUB TOTAL (Lines K through M)						\$121,825,0
	I IIMP CVD4	\$10.252.55C		¢10 274 000		
CONTINGENCIES (15% of Lines N)	LUMP SUM	\$18,273,750	1	\$18,274,000		\$18,274,00
MITIGATION (2% of Line N)	LUMP SUM	\$2,436,500	1	\$2,000,000		\$2,000,00
ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$9,746,000	1	\$9,746,000		\$9,746,00
CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$18,273,750	1	\$18,274,000		\$18,274,00
	HECTADE	\$241,000	4.2	\$1,012,000		\$1,012,00
RIGHT OF WAY	HECTARE	\$241,000	4.2	\$1,012,000		φ1,012,00

GRAVINA ACCESS PROJECT	OPTION	C4(a2)	- Development	Access		
		200' B	RIDGE CLEAR	ANCE		
	1/15/2002 14:58					Page 10
Width Clearing & Grubbing (m) - Wc	= 35		Roadway (m)			r age 10
Unit Weight Asphalt (Megagram/m) - Wa	1.50	10+000	11+500	1500		
Unit Weight Aggregate Base Course (Megagram/m) - Wb Unit Weight Borrow (Megagram/m) - Ws	= <u>4.30</u> = 23.30	0+000 0+000	0+000 0+000	0		
Length Culvert Crossings (m) - Lc	= 40	15+325	19+000	3675		
Width Creek Crossing Bridge (m) - Wbr	= 14.6	0+000	0+000	0		
Width of Right of Way (m) - Wr Contingency Line O (%) - Co	= <u>50</u> = <u>15.0%</u>		ing Bridges (m) =	<u>0</u> 5175		
CONCEPT COST ESTIMATE	15.070	Length Rol	# Bridges = 0	2172		
			#Tunnels = 0			
			vert Crossings = 9 eek Crossings = 0			
		#Bridge Cr	cck Crossings – u			TOTAL
	UNITS	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM COST
A EARTHWORK 1. Clearing and Grubbing	HECTARES	\$11,000	18.2	\$200,000	5.0%	\$210,000
2. Rock Excavation	CUBIC METER	\$13	191000	\$2,483,000	25.0%	\$3,104,000
3. Borrow	MEGAGRAM	\$12	120578	\$1,447,000	10.0%	\$1,592,000
B SURFACING / PAVING						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	7763	\$349,000	2.5%	\$358,000
Aggregate Base Course Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Paymt)	MEGAGRAM MEGAGRAM	\$24 \$200	22253 466	\$534,000 \$93,200	5.0% 1.0%	\$561,000 \$94,000
	MEGAGRAM	φΔΟΟ	700	φ23,200	1.070	φ 24, 000
C STRUCTURES 1. Bridges (See above for number)						
a. Superstructure.	SQUARE METER	<u>\$0</u>	0	\$0	10.0%	\$0
b. Substructure				-		
i. Deep Water ii. Shallow Water	LUMP SUM SQUARE METER	\$14,700,000 \$1,615	0	\$0 \$0	25.0% 25.0%	\$0 \$0
iii. Over Land	SQUARE METER	\$1,076	0	\$0	25.0%	\$0 \$0
2. Moveable Bridge	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
D DRAINAGE						
Culvert Crossings (See above for number) Bridges needed for creek crossings (See above for number)	METER SQUARE METER	\$500 \$970	360	\$180,000 \$0	15.0% 0.0%	\$207,000 \$0
3. Other Drainage	SQUARE METER	φλίο	0	φυ	0.070	Ψ
a. Development Access	METER	\$100	5175	\$518,000	15.0%	\$596,000
b. Airport Access	METER	\$100	0	\$0	15.0%	\$0
E TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
F MISCELLANEOUS ROADS						
1. Connection to Airport	LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0
G SUB TOTAL (Lines A, B, D through F)						\$6,972,000
H MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$418,320	1	\$418,000		\$418,000
	LUM SUM	φ410,320	<u> </u>	\$410,000		φ-10,000
Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$209,160	1	\$209,000		\$209,000
3. Miscellanceous Construction Items (25% of Line G; Items						-
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)	LUMP SUM	\$1,743,000	1	\$1,743,000		\$1,743,000
I SUB TOTAL (Lines G through H)		7-,- 1-,- 1	_	72, 12, 10		
, , ,						\$9,342,000
J FERRY TERMINAL 1. Passenger Shelter & Ticket Booth	SQUARE METER	\$0	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0 \$0
K SUB TOTAL (Lines A through F, H & J)		_	-			\$9,342,000
, , ,	I IIMD CUM	\$024.200	1	\$024,000		
L MOBILIZATION (10% of Line K)	LUMP SUM	\$934,200	1	\$934,000		\$934,000
M Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	0	\$0	0.0%	\$0
N SUB TOTAL (Lines K through M)						\$10,276,000
O CONTINGENCIES (15% of Lines N)	LUMP SUM	\$1,541,400	1	\$1,541,000		\$1,541,000
P MITIGATION (2% of Line N)	LUMP SUM	\$205,520	1	\$206,000		\$206,000
Q ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$822,080	1	\$822,000		\$822,000
						•
R CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$1,541,400	1	\$1,541,000		\$1,541,000
S RIGHT OF WAY	HECTARE	<u>\$0</u>	25.9	\$0		\$0
T TOTAL ESTIMATED COST (Lines N through S)						\$14,000,000

GRAVINA ACCESS PROJECT	OPTION :	D1	- Airport Acce	SS		
		120' B	RIDGE CLEAF	RANCE		
Wildt Classics & Coulties (as) Wa	1/15/2002 14:58		D = d==== (==)			Pag
Width Clearing & Grubbing (m) - Wc = Unit Weight Asphalt (Megagram/m) - Wa =	= 35	0+000	Roadway (m) =	0		
Unit Weight Aggregate Base Course (Megagram/m) - Wb	= 4.30	11+500	11+602	102		
Unit Weight Borrow (Megagram/m) - Ws =	= 23.30	12+582	13+155	573		
Length Culvert Crossings (m) - Lc	= 40	0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr	14.6	0+000	0+000	0		
Width of Right of Way (m) - Wr	= 50	Creek Crossi	ing Bridges (m)	- 0		
Contingency Line O (%) - Co	15.0%	Length Roa	ad - Bridges (m) =	675		
CONCEPT COST ESTIMATE			# Bridges = 1			
			#Tunnels = 0			
			vert Crossings = 9	2		
		#Bridge Cr	eek Crossings = 0			mom. r
	UNITS	UNIT COST	QUANTITY	COST	CONTINGENCY	TOTAL ITEM CO
A EARTHWORK	UNIIS	UNIT COST	QUANTITI	<u>COS1</u>	CONTINGENCI	HEMICO
Clearing and Grubbing	HECTARES	\$11,000	2.4	\$26,000	5.0%	\$27,000
2. Rock Excavation	CUBIC METER	\$13	333000	\$4,329,000	25.0%	\$5,411,00
3. Borrow	MEGAGRAM	\$12	15728	\$189,000	10.0%	\$208,000
	MADOMONIA.	412	10.20	\$203,000	2010 / 0	\$200,000
SURFACING / PAVING	MEGLORIST	A 4=	1010	A 4 2 6 0 0	2 50/	
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	1013	\$46,000	2.5%	\$47,000
2. Aggregate Base Course	MEGAGRAM	\$24	2903	\$70,000	5.0%	\$74,000
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	61	\$12,200	1.0%	\$12,000
STRUCTURES						
Bridges (See above for number)						
a. Superstructure.	SQUARE METER	<u>\$2,025</u>	14,308	\$28,974,000	10.0%	\$31,871,0
b. Substructure						
i. Deep Water	LUMP SUM	\$10,260,000	1	\$10,260,000	25.0%	\$12,825,0
ii. Shallow Water	SQUARE METER	\$1,615	<u>0</u>	\$0	25.0%	\$0
iii. Over Land	SQUARE METER	\$1,076	9,072	\$9,761,000	25.0%	\$12,201,0
2. Moveable Bridge	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
DRAINAGE						
Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$0	0.0%	\$0
3. Other Drainage						•
a. Development Access	METER	\$100	0	\$0	15.0%	\$0
b. Airport Access	METER	\$100	675	\$68,000	15.0%	\$78,000
E TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
I TRAFFIC SERVICES	LUMF SUM	\$250,000	1	\$250,000	0.076	\$250,000
F MISCELLANEOUS ROADS						
1. Connection to Airport	LUMP SUM	\$181,500	1	\$182,000	10.0%	\$200,000
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0
SUB TOTAL (Lines A, B, D through F)						\$6,514,00
I MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$390,840	1	\$391,000		\$391,000
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$195,420	1	\$195,000		\$195,000
				,		
3. <u>Miscellanceous Construction Items</u> (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control	* * * * * * * * * * * * * * * * * * *	44 (20 500		A4 <20 000		d4 < 30 00
devices, lighting/load centers, etc.)	LUMP SUM	\$1,628,500	1	\$1,629,000		\$1,629,00
SUB TOTAL (Lines G through H)						\$8,729,00
I FERRY TERMINAL		1				
	SOUARE METER	\$0	0	\$0	0.0%	\$0
1 Passenger Shelter & Ticket Rooth	SQUARE METER	\$0 \$0	0	\$0	0.0%	\$0 \$0
Passenger Shelter & Ticket Booth Earthworks, Surfacing, Paving		Ψυ	<u> </u>	ΨΨ	0.0 / 8	
2. Earthworks, Surfacing, Paving	SQUARE METER		1 1			\$65,626,00
2. Earthworks, Surfacing, Paving	SQUARE METER				1	\$6,563,00
2. Earthworks, Surfacing, Paving SUB TOTAL (Lines A through F, H & J)	LUMP SUM	\$6,562,600	1	\$6,563,000		
2. Earthworks, Surfacing, Paving SUB TOTAL (Lines A through F, H & J) MOBILIZATION (10% of Line K)	LUMP SUM					
		\$6,562,600 <u>\$0</u>	1 0	\$6,563,000 \$0	0.0%	\$0
2. Earthworks, Surfacing, Paving SUB TOTAL (Lines A through F, H & J) MOBILIZATION (10% of Line K)	LUMP SUM				0.0%	\$0
2. Earthworks, Surfacing, Paving C SUB TOTAL (Lines A through F, H & J) MOBILIZATION (10% of Line K) I Ferry System Acquisition Cost V SUB TOTAL (Lines K through M)	LUMP SUM LUMP SUM	<u>\$0</u>	0	\$0	0.0%	\$0 \$72,189,00
2. Earthworks, Surfacing, Paving SUB TOTAL (Lines A through F, H & J) MOBILIZATION (10% of Line K) I Ferry System Acquisition Cost	LUMP SUM				0.0%	\$0 \$72,189,00
2. Earthworks, Surfacing, Paving SUB TOTAL (Lines A through F, H & J) MOBILIZATION (10% of Line K) I Ferry System Acquisition Cost SUB TOTAL (Lines K through M) CONTINGENCIES (15% of Lines N)	LUMP SUM LUMP SUM	\$0 \$10,828,350	1	\$0 \$10,828,000	0.0%	\$0 \$72,189,00 \$10,828,00
2. Earthworks, Surfacing, Paving SUB TOTAL (Lines A through F, H & J) MOBILIZATION (10% of Line K) I Ferry System Acquisition Cost SUB TOTAL (Lines K through M) CONTINGENCIES (15% of Lines N) MITIGATION (2% of Line N)	LUMP SUM LUMP SUM LUMP SUM LUMP SUM	\$0 \$10,828,350 \$1,443,780	1	\$0 \$10,828,000 \$1,444,000	0.0%	\$0 \$72,189,00 \$10,828,00 \$1,444,00
2. Earthworks, Surfacing, Paving SUB TOTAL (Lines A through F, H & J) MOBILIZATION (10% of Line K) Ferry System Acquisition Cost SUB TOTAL (Lines K through M)	LUMP SUM LUMP SUM	\$0 \$10,828,350	1	\$0 \$10,828,000	0.0%	
2. Earthworks, Surfacing, Paving SUB TOTAL (Lines A through F, H & J) MOBILIZATION (10% of Line K) I Ferry System Acquisition Cost I SUB TOTAL (Lines K through M) CONTINGENCIES (15% of Lines N) MITIGATION (2% of Line N) ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM LUMP SUM LUMP SUM LUMP SUM LUMP SUM	\$10,828,350 \$1,443,780 \$5,775,120	1	\$0 \$10,828,000 \$1,444,000 \$5,775,000	0.0%	\$0 \$72,189,00 \$10,828,00 \$1,444,00 \$5,775,00
2. Earthworks, Surfacing, Paving SUB TOTAL (Lines A through F, H & J) MOBILIZATION (10% of Line K) I Ferry System Acquisition Cost SUB TOTAL (Lines K through M) CONTINGENCIES (15% of Lines N) MITIGATION (2% of Line N)	LUMP SUM LUMP SUM LUMP SUM LUMP SUM	\$0 \$10,828,350 \$1,443,780	1 1 1	\$0 \$10,828,000 \$1,444,000	0.0%	\$0 \$72,189,00 \$10,828,00 \$1,444,00

GRAVINA ACCESS PROJECT	OPTION	. D1	- Developmen			
		120' B	RIDGE CLEAR	RANCE		
Width Cleaning & Cambbing (m) We	1/15/2002 14:58 = 35		Poodway (m)			Pag
Width Clearing & Grubbing (m) - Wo Unit Weight Asphalt (Megagram/m) - Wa		10+000	Roadway (m) =	1500		
Unit Weight Aggregate Base Course (Megagram/m) - Wb		0+000	0+000	0		
Unit Weight Borrow (Megagram/m) - Ws		0+000	0+000	0		
Length Culvert Crossings (m) - Lo		<u>15+325</u>	<u>19+000</u>	3675		
Width Creek Crossing Bridge (m) - Wbr		0+000	<u>0+000</u>	0		
Width of Right of Way (m) - Wr			ing Bridges (m)	= 0		
Contingency Line O (%) - Co CONCEPT COST ESTIMATE	= 15.0%	Length Roa	# Bridges =	5175		
CONCEPT COST ESTIMATE			#Tunnels =	2		
		# Culy	vert Crossings =)		
			eek Crossings =)		
						TOTAL
	<u>UNITS</u>	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM CO
A EARTHWORK	VIEGE L DEG	444.000	10.2	#	7 00/	\$210.000
1. Clearing and Grubbing	HECTARES CUBIC METER	\$11,000 \$13	18.2 191000	\$200,000 \$2,483,000	5.0% 25.0%	\$210,000 \$3,104,00
2. Rock Excavation 3. Borrow	MEGAGRAM	\$13	120578	\$1,447,000	10.0%	\$3,104,00
	MEGAGRAM	φ12	120376	\$1,447,000	10.0 /6	\$1,392,00
3 SURFACING / PAVING	1					44
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	7763	\$349,000	2.5%	\$358,000
2. Aggregate Base Course	MEGAGRAM	\$24	22253	\$534,000	5.0%	\$561,000
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	466	\$93,200	1.0%	\$94,000
STRUCTURES						_
1. Bridges (See above for number)	acri	1		1		
a. Superstructure.	SQUARE METER	<u>\$0</u>	0	\$0	10.0%	\$0
b. Substructure i. Deep Water	LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water	SQUARE METER	\$14,700,000	0	\$0 \$0	25.0%	\$0 \$0
iii. Over Land	SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
DRAINAGE						
Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$0	0.0%	\$0
3. Other Drainage	SQUILLE METER	ψ3.0		Ψ	0.070	Ψ.0
a. Development Access	METER	\$100	5175	\$518,000	15.0%	\$596,000
b. Airport Access	METER	\$100	0	\$0	15.0%	\$0
E TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
	Beili beili	Ψ220,000	-	Ψ250,000	0.070	Ψ250,000
F MISCELLANEOUS ROADS	* * * * * * * * * * * * * * * * * * *	\$404 F00		40	10.00/	40
Connection to Airport Connection to Ketchikan	LUMP SUM LUMP SUM	\$181,500 \$121,000	0	\$0 \$0	10.0% 10.0%	\$0 \$0
	LUMIF SUM	\$121,000	<u>U</u>	\$ U	10.076	
SUB TOTAL (Lines A, B, D through F)						\$6,972,00
H MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$418,320	<u>1</u>	\$418,000		\$418,000
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$209,160	1	\$209,000		\$209,000
		+202,200	-	¥=02,000		# = 07,000
3. <u>Miscellanceous Construction Items</u> (25% of Line G; Items		1				
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,		1				
geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control						
devices, lighting/load centers, etc.)	LUMP SUM	\$1,743,000	1	\$1,743,000		\$1,743,00
	Zenii beni	ψ <u>2</u> ,. 25,000	=	ψ±,, πυ,υυυ		
SUB TOTAL (Lines G through H)		-		-		\$9,342,00
FERRY TERMINAL						
1. Passenger Shelter & Ticket Booth	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
SUB TOTAL (Lines A through F, H & J)		1		1		\$9,342,00
· · · · · · · · · · · · · · · · · · ·	T TIMED CAN A	\$024.200		pp24 000		
MOBILIZATION (10% of Line K)	LUMP SUM	\$934,200	1	\$934,000		\$934,000
Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	0	\$0	0.0%	\$0
SUB TOTAL (Lines K through M)		1 -		+ = =		\$10,276,00
				1		
CONTINGENCIES (15% of Lines N)	LUMP SUM	\$1,541,400	1	\$1,541,000		\$1,541,00
MITIGATION (2% of Line N)	LUMP SUM	\$205,520	1	\$206,000		\$206,000
ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$822,080	1	\$822,000	<u> </u>	\$822,000
CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$1,541,400	1	\$1,541,000		\$1,541,00
RIGHT OF WAY	HECTARE	\$0	25.9	\$0		\$0

GRAVINA ACCESS PROJECT	OPTION :	F3(2)	- Airport Acc			
		200' B	RIDGE CLEA	RANCE		
	1/15/2002 14:58					Dogo
Width Clearing & Grubbing (m) - Wc			Roadway (m)	=		Page
Unit Weight Asphalt (Megagram/m) - Wa		<u>10+000</u>	<u>10+896</u>	896		
Unit Weight Aggregate Base Course (Megagram/m) - Wb		11+874	13+119	1245		
Unit Weight Borrow (Megagram/m) - Ws		<u>11+413</u>	<u>15+325</u>	3912		
Length Culvert Crossings (m) - Lc = Width Creek Crossing Bridge (m) - Wbr =		10+000 0+000	11+500 0+000	1500		
Width of Right of Way (m) - Wr			ng Bridges (m)	= 0		
Contingency Line O (%) - Co			d - Bridges (m)	= 7553		
CONCEPT COST ESTIMATE			# Bridges =	2		
		# Cl-	#Tunnels = ert Crossings =	_		
			eek Crossings =			
		"Drage or	Crossings =			TOTAL
	<u>UNITS</u>	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM COS
A EARTHWORK	HECT A DEC	\$11.000	26.5	#202 000	7.00/	#20 5 000
1. Clearing and Grubbing 2. Rock Excavation	HECTARES CUBIC METER	\$11,000 \$13	26.5 249000	\$292,000 \$3,237,000	5.0% 25.0%	\$307,000 \$4,046,00
3. Borrow	MEGAGRAM	\$13	175985	\$2,112,000	10.0%	\$2,323,00
B SURFACING / PAVING		·		, , ,,,,,		1 / 7 / 7
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	11330	\$510,000	2.5%	\$523,000
Aspirat Concrete Favement Aggregate Base Course	MEGAGRAM	\$24	32478	\$779,000	5.0%	\$818,000
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	680	\$136,000	1.0%	\$137,000
C STRUCTURES	 					
Bridges (See above for number)						
a. Superstructure.	SQUARE METER	<u>\$1,987</u>	24,163	\$48,012,000	10.0%	\$52,813,00
b. Substructure		440.46		***		444
i. Deep Water ii. Shallow Water	LUMP SUM	\$10,260,000	6,825	\$10,260,000	25.0% 25.0%	\$12,825,00 \$13,778,00
ii. Over Land	SQUARE METER SQUARE METER	\$1,615 \$1,076	12,164	\$11,022,000 \$13,088,000	25.0%	\$15,778,00
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$10,500,00
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
D DRAINAGE						
Culvert Crossings (See above for number)	METER	\$500	600	\$300,000	15.0%	\$345,000
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$0	0.0%	\$0
3. Other Drainage						
a. Development Access	METER	\$100	0	\$0	15.0%	\$0
b. Airport Access	METER	\$100	7553	\$755,000	15.0%	\$868,000
E TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
F MISCELLANEOUS ROADS						
1. Connection to Airport	LUMP SUM	\$181,500	<u>0</u>	\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0
G SUB TOTAL (Lines A, B, D through F)						\$9,617,00
H MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$577,020	1	\$577,000		\$577,000
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$288,510	1	\$289,000		\$289,000
3. Miscellanceous Construction Items (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control		** ** ***		** ** ***		** ** **
devices, lighting/load centers, etc.)	LUMP SUM	\$2,404,250	1	\$2,404,000		\$2,404,00
I SUB TOTAL (Lines G through H)						\$12,887,00
J FERRY TERMINAL						
1. Passenger Shelter & Ticket Booth	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
K SUB TOTAL (Lines A through F, H & J)						\$108,663,0
L MOBILIZATION (10% of Line K)	LUMP SUM	\$10,866,300	1	\$10,866,000		\$10,866,00
M Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	0	\$0	0.0%	\$0
N SUB TOTAL (Lines K through M)						\$119,529,0
O CONTINGENCIES (15% of Lines N)	LUMP SUM	\$17,929,350	1	\$17,929,000		\$17,929,00
P MITIGATION (2% of Line N)	LUMP SUM	\$2,390,580	1	\$2,000,000		\$2,000,00
Q ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$9,562,320	1	\$9,562,000		\$9,562,000
						\$15 020 00
R CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$17,929,350	1	\$17,929,000		\$17.929.11
R CONSTRUCTION MANAGEMENT (11% of Line N) S RIGHT OF WAY	LUMP SUM HECTARE	\$17,929,350 \$40,000	10	\$17,929,000 \$400,000		\$17,929,00 \$400,000

GRAVINA ACCESS PROJECT	OPTION	F3(2)	-	Developmei	ıt A	Access		
		200' BI		DGE CLEA	RA	NCE		
	4/45/0000 44:50							D 1
Width Clearing & Grubbing (m) - Wc	1/15/2002 14:58 = 35		F	Roadway (m)	-			Page 1
Unit Weight Asphalt (Megagram/m) - Wa	= <u>1.50</u>	<u>0+000</u>		<u>0+000</u>		0		
Unit Weight Aggregate Base Course (Megagram/m) - Wb		0+000	H	0+000 0+000		0		
Unit Weight Borrow (Megagram/m) - Ws Length Culvert Crossings (m) - Le		0+000 15+325	H	19+000		3675		
Width Creek Crossing Bridge (m) - Wbr		0+000		0+000		0		
Width of Right of Way (m) - Wr		Creek Cross			=	_		
Contingency Line O (%) - Co CONCEPT COST ESTIMATE	= 15.0%	Length Ro	ad -	Bridges (m) # Bridges =	0	3675		
CONCERT COOF ESTEMATE			Ħ	#Tunnels =	0			
				t Crossings =	9			
		#Bridge Cr	reel	Crossings =	0			TOTAL
	<u>UNITS</u>	UNIT COST		QUANTITY		COST	CONTINGENCY	ITEM COST
A EARTHWORK	***************************************	***		40.0		44.44.000		****
1. Clearing and Grubbing 2. Rock Excavation	HECTARES CUBIC METER	\$11,000 \$13	H	12.9 133000		\$142,000 \$1,729,000	5.0% 25.0%	\$149,000 \$2,161,000
3. Borrow	MEGAGRAM	\$12	Ħ	85628		\$1,028,000	10.0%	\$1,131,000
B SURFACING / PAVING								
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	Ш	5513		\$248,000	2.5%	\$254,000
2. Aggregate Base Course	MEGAGRAM	\$24	$\sqcup \mathbb{I}$	15803		\$379,000	5.0%	\$398,000
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	Н	331		\$66,200	1.0%	\$67,000
C STRUCTURES			H					
Bridges (See above for number) Superstructure.	SQUARE METER	\$0	H	0		\$0	10.0%	\$0
b. Substructure			Ħ	<u>~</u>			20.070	ΨΨ
i. Deep Water	LUMP SUM	\$14,700,000	П	0		\$0	25.0%	\$0
ii. Shallow Water iii. Over Land	SQUARE METER SQUARE METER	\$1,615 \$1,076	H	0		\$0 \$0	25.0% 25.0%	\$0 \$0
2. Moveable Bridge	SQUARE METER	\$0	Ħ	0		\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000		0		\$0	0.0%	\$0
D DRAINAGE			Ħ					
1. Culvert Crossings (See above for number)	METER	\$500		360		\$180,000	15.0%	\$207,000
Bridges needed for creek crossings (See above for number) Other Drainage	SQUARE METER	\$970	Н	0		\$0	0.0%	\$0
a. Development Access	METER	\$100	H	3675		\$368,000	15.0%	\$423,000
b. Airport Access	METER	\$100		0		\$0	15.0%	\$0
E TRAFFIC SERVICES	LUMP SUM	\$250,000		1		\$250,000	0.0%	\$250,000
F MISCELLANEOUS ROADS			H					
1. Connection to Airport	LUMP SUM	\$181,500		<u>0</u>		\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	H	<u>0</u>		\$0	10.0%	\$0
G SUB TOTAL (Lines A, B, D through F)								\$5,040,000
H MISCELLANEOUS ROADWAY ITEMS								
1. Removal Items (6% of Line G; Items include pavement,	* * * * * * * * * * * * * * * * * * *	4202 400				4202.000		#202.000
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$302,400	Ш	<u>1</u>		\$302,000		\$302,000
2. Other Excavation and Embankment Construction (3% of								
Line G; Items include muck excavation, minor structure excavation and backfill, etc.)	LUMP SUM	\$151,200		1		\$151,000		\$151,000
	Demi geni	\$101,200	H	-		ψ121,000		Ψ101,000
 Miscellanceous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, 								
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,								
geotextiles, riprap, erosion and pollution control/administration,								
construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)	LUMP SUM	\$1,260,000		1		\$1,260,000		\$1,260,000
	Lewi Sew	\$1,200,000	Ħ			\$1,200,000		
I SUB TOTAL (Lines G through H)			H					\$6,753,000
J FERRY TERMINAL 1. Passenger Shelter & Ticket Booth	SQUARE METER	\$0	H	0		\$0	0.0%	\$0
Passenger Sneiter & Ticket Booth Earthworks, Surfacing, Paving	SQUARE METER	\$0 \$0	H	0		\$0 \$0	0.0%	\$0 \$0
K SUB TOTAL (Lines A through F, H & J)			Ħ					\$6,753,000
	T TIMP OTP	\$ CTE 200	Ħ			\$277.000		
L MOBILIZATION (10% of Line K)	LUMP SUM	\$675,300	H	1		\$675,000		\$675,000
M Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	\mathbb{H}	0		\$0	0.0%	\$0
N SUB TOTAL (Lines K through M)			П					\$7,428,000
O CONTINGENCIES (15% of Lines N)	LUMP SUM	\$1,114,200	Ħ	1		\$1,114,000		\$1,114,000
P MITIGATION (2% of Line N)	LUMP SUM	\$148,560	П	1		\$149,000		\$149,000
Q ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$594,240	Ħ	1		\$594,000		\$594,000
			Ħ					
R CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$1,114,200	Н	1		\$1,114,000		\$1,114,000
S RIGHT OF WAY	HECTARE	<u>\$0</u>	Щ	<u>18.4</u>		\$0		\$0
T TOTAL ESTIMATED COST (Lines N through S)			+					\$10,000,000

OPTION	. C2	Airmort Acce	ogg		
Of Hon.	. 62		33		
		FERRI			
		Roadway (m)	_		Page
= 1.50	<u>15+325</u>	22+750	7425		
	10+000	11+843	1843		
= 14.6	0+000	0+000	0		
= <u>50</u>		Bridges (m)	= <u>0</u>		
= 15.0%	Length Roa		9268		
		#Tunnels =)		
)		
	#Bridge Cro	eek Crossings =	<u>)</u>		TOTAL
UNITS	UNIT COST	OUANTITY	COST	CONTINGENCY	TOTAL ITEM COST
HECTARES	\$11,000	32.5	\$358,000	5.0%	\$376,000
					\$4,144,000 \$2,850,000
MEGNICIAN	Ψ12	213743	ψ2,251,000	10.0 / 0	ψ2,020,000
MEGAGRAM	\$45	13902	\$626,000	2.5%	\$642,000
MEGAGRAM	\$24	39853	\$956,000	5.0%	\$1,004,000
MEGAGRAM	\$200	835	\$167,000	1.0%	\$169,000
SOLIADE METER	\$0	Δ.	¢n	10.00/	\$0
SQUAKE METER	<u>30</u>	<u>u</u>	φU	10.0%	ÞU
LUMP SUM	\$14,700,000	<u>0</u>	\$0	25.0%	\$0
•	\$1,615	0			\$0
		_			\$0 \$0
LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
METER	\$500	360	\$180,000	15.0%	\$207,000
SQUARE METER	\$970	0	\$0	0.0%	\$0
METER	\$100	0	\$0	15.0%	\$0
METER	\$100	9268	\$927,000	15.0%	\$1,066,000
LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
LUMP SUM	\$181,500	<u>0</u>	\$0	10.0%	\$0
LUMP SUM	\$121,000	0	\$0	10.0%	\$0
					\$10,708,000
	4 < 42 400		****		
LUMP SUM	\$642,480	1	\$642,000		\$642,000
LUMP SUM	\$321,240	1	\$321,000		\$321,000
Ecim Sem	ψ321,240		ψ521,000		ψ521,000
I HMD CHM	\$2 677 000	1	\$2 677 000		\$2,677,000
LUMF SUM	\$2,077,000	1	\$2,077,000		
					\$14,348,000
COLLABE METER	\$1.100	200	¢220.000	0.00/	\$330,000
					\$330,000
	4.00		,,		\$16,180,000
	h4 510 511				
		1			\$1,618,000
LUMP SUM	\$21,560,000	1	\$21,560,000	0.0%	\$21,560,000
					\$39,358,000
LUMP SUM	\$5,903,700	1	\$5,904,000	<u> </u>	\$5,904,000
			\$787,000		\$787,000
LUMPSUM	\$787.160				
LUMP SUM	\$787,160	1	·		
LUMP SUM	\$3,148,640	1	\$3,149,000		\$3,149,000
			·		
	= 4.30 = 23.30 = 40 = 14.6 = 50 = 15.0%	1/15/2002 14:58	TERRY	1/15/2002 14:58	Total Ferry

GRAVINA ACCESS PROJECT	OPTION :	G2	- Development A	ccess		
			FERRY			
	4/45/0000 44:50					, n
Width Clearing & Grubbing (m) - Wc =	1/15/2002 14:58		Roadway (m) =			Pag
Unit Weight Asphalt (Megagram/m) - Wa =		0+000	0+000	0		
Unit Weight Aggregate Base Course (Megagram/m) - Wb =	= 4.30	0+000	0+000	0		
Unit Weight Borrow (Megagram/m) - Ws =	= 23.30	<u>0+000</u>	<u>0+000</u>	0		
	= <u>40</u>	0+000	<u>0+000</u>	0		
8 8 7 11	= <u>14.6</u>	0+000	<u>0+000</u>	0		
Width of Right of Way (m) - Wr = Contingency Line O (%) - Co =		Longth Pos	Bridges (m) =	<u>0</u>		
CONCEPT COST ESTIMATE	13.0 /0	Length Koz	# Bridges = 0			
OCCUPATION DESCRIPTION			#Tunnels = 0			
		# Culv	ert Crossings = 0			
		#Bridge Cr	eek Crossings = 0			
	TIMETO	TIME COST	OTTA NUTETRY	COCT	CONTINCENCY	TOTAL
EARTHWORK	UNITS	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM CO
Clearing and Grubbing	HECTARES	\$11,000	0	\$0	5.0%	\$0
2. Rock Excavation	CUBIC METER	\$13	0	\$0	25.0%	\$0
3. Borrow	MEGAGRAM	\$12	0	\$0	10.0%	\$0
SURFACING / PAVING						
Asphalt Concrete Pavement	MEGAGRAM	\$45	0	\$0	2.5%	\$0
2. Aggregate Base Course	MEGAGRAM	\$24	0	\$0	5.0%	\$0
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	0	\$0	1.0%	\$0
STRUCTURES			+ -			-
1. Bridges (See above for number)			+			
a. Superstructure.	SQUARE METER	<u>\$0</u>	0	\$0	10.0%	\$0
b. Substructure						
i. Deep Water	LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water	SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land	SQUARE METER	\$1,076	0	\$0 \$0	25.0% 0.0%	\$0
2. Moveable Bridge 3. Parking Garage	SQUARE METER LUMP SUM	\$0 \$7,000,000	0	\$0 \$0	0.0%	\$0 \$0
	LUMF SUM	\$7,000,000	<u>U</u>	φU	0.076	φu
DRAINAGE						
1. Culvert Crossings (See above for number)	METER	\$500	0	\$0	15.0%	\$0
Bridges needed for creek crossings (See above for number) Other Drainage	SQUARE METER	\$970	0	\$0	0.0%	\$0
a. Development Access	METER	\$100	0	\$0	15.0%	\$0
b. Airport Access	METER	\$100	0	\$0	15.0%	\$0
TRAFFIC SERVICES	LUMP SUM	\$250,000	0	\$0	0.0%	\$0
	LUMP SUM	\$45U,UUU	<u>U</u>	φu	U.U%	20
MISCELLANEOUS ROADS		4404		4-	46.55	
Connection to Airport Connection to Vetabilism	LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0
SUB TOTAL (Lines A, B, D through F)			T			\$0
MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$0	<u>1</u>	\$0		\$0
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$0	<u>1</u>	\$0		\$0
						*
3. <u>Miscellanceous Construction Items</u> (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control						
devices, lighting/load centers, etc.)	LUMP SUM	\$0	1	\$0		\$0
SUB TOTAL (Lines G through H)			+ -			\$0
						ΨΨ
FERRY TERMINAL	SOLIADE METER	\$0	0	\$0	0.0%	\$0
Passenger Shelter & Ticket Booth Earthworks, Surfacing, Paving	SQUARE METER SQUARE METER	<u>\$0</u> \$0	0	\$0 \$0	0.0%	\$0 \$0
	SQUIREMETER	φυ	<u> </u>	φυ	0.0 /0	
SUB TOTAL (Lines A through F, H & J)			1			\$0
MOBILIZATION (10% of Line K)	LUMP SUM	\$0	1	\$0		\$0
Ferry System Acquisition Cost	LUMP SUM	\$0	0	\$0	0.0%	\$0
	LUMI SUM	φυ	<u>v</u>	ψυ	0.0 /0	
SUB TOTAL (Lines K through M)						\$0
CONTINGENCIES (15% of Lines N)	LUMP SUM	\$0	1	\$0		\$0
	LUMP SUM		1	\$0		\$0
MITIGATION (2% of Line N)		\$0	1			
ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$0	1	\$0		\$0
CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$0	1	\$0		\$0
CONSTRUCTION MANAGEMENT (11% OF THE IN)			1 1	T "		Ψ.
RIGHT OF WAY	HECTARE	\$0	0	\$0		\$0

GRAVINA ACCESS PROJECT	OPTION	C3	- Airport Acce	agg		
GRAVINA ACCESS PROJECT	Office	. 03	FERRY	:33		
			FERRI			
Width Clearing & Grubbing (m) - Wc	1/15/2002 14:58		Roadway (m)	_		Page
Unit Weight Asphalt (Megagram/m) - Wa		<u>13+700</u>	15+325	1625		
Unit Weight Aggregate Base Course (Megagram/m) - Wb		10+000	11+768	1768		
Unit Weight Borrow (Megagram/m) - Ws = Length Culvert Crossings (m) - Lc =		0+000 0+000	0+000 0+000	0		
Width Creek Crossing Bridge (m) - Wbr		0+000	0+000	0		
Width of Right of Way (m) - Wr			Bridges (m)	= <u>0</u>		
Contingency Line O (%) - Co	<u>15.0%</u>	Length Roa	d - Bridges (m)	= 3393		
CONCEPT COST ESTIMATE			# Bridges = #Tunnels =	<u>)</u>		
		# Culv	ert Crossings =	9		
		#Bridge Cr	eek Crossings =	0		
	UNITS	UNIT COST	QUANTITY	COST	CONTINGENCY	TOTAL ITEM COST
A EARTHWORK	UNIIS	UNIT COST	QUANTITI	<u>COS1</u>	CONTINGENCI	HEM COST
1. Clearing and Grubbing	HECTARES	\$11,000	11.9	\$131,000	5.0%	\$138,000
2. Rock Excavation	CUBIC METER	\$13	115000	\$1,495,000	25.0%	\$1,869,000
3. Borrow	MEGAGRAM	\$12	79057	\$949,000	10.0%	\$1,044,000
B SURFACING / PAVING	1500100111	***		****		****
Asphalt Concrete Pavement Aggregate Base Course	MEGAGRAM MEGAGRAM	\$45 \$24	5090 14590	\$229,000 \$350,000	2.5% 5.0%	\$235,000 \$368,000
2. Aggregate Base Course 3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$24 \$200	306	\$350,000	1.0%	\$62,000
C STRUCTURES	STOREN	4200		Ψ02,200	2.0 / 0	+~=,000
1. Bridges (See above for number)				1		
a. Superstructure.	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	10.0%	\$0
b. Substructure	V VV	044 = 00 - 11		4.0		4.7
i. Deep Water ii. Shallow Water	LUMP SUM SQUARE METER	\$14,700,000 \$1,615	0	\$0 \$0	25.0% 25.0%	\$0 \$0
iii. Over Land	SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
D DRAINAGE						
Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$0	0.0%	\$0
3. Other Drainage a. Development Access	METER	\$100	0	\$0	15.0%	\$0
b. Airport Access	METER	\$100	3393	\$339,000	15.0%	\$390,000
E TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
F MISCELLANEOUS ROADS		7-20,000	-	,,	,	,,
NISCELLANEOUS ROADS Connection to Airport	LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0
G SUB TOTAL (Lines A, B, D through F)						\$4,563,000
H MISCELLANEOUS ROADWAY ITEMS						
Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$273,780	<u>1</u>	\$274,000		\$274,000
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$136,890	1	\$137,000		\$137,000
3. Miscellanceous Construction Items (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)	LUMP SUM	\$1,140,750	1	\$1,141,000		\$1,141,000
	Demi sem	ψ1,140,720	-	ψ1,141,000		
I SUB TOTAL (Lines G through H)						\$6,115,000
J FERRY TERMINAL	COLLABE METER	¢1 100	200	¢220.000	0.00/	\$330,000
Passenger Shelter & Ticket Booth Earthworks, Surfacing, Paving	SQUARE METER SQUARE METER	\$1,100 \$65	300 26400	\$330,000 \$1,716,000	0.0%	\$330,000 \$1,716,000
	SQUARE METER	<u>\$05</u>	20400	φ1,710,000	0.070	
K SUB TOTAL (Lines A through F, H & J)						\$8,161,000
L MOBILIZATION (10% of Line K)	LUMP SUM	\$816,100	1	\$816,000		\$816,000
M Ferry System Acquisition Cost	LUMP SUM	<u>\$21,560,000</u>	1	\$21,560,000	0.0%	\$21,560,000
N SUB TOTAL (Lines K through M)				1		\$30,537,000
O CONTINGENCIES (15% of Lines N)	LUMP SUM	\$4,580,550	1	\$4,581,000		\$4,581,000
			1			
P MITIGATION (2% of Line N)	LUMP SUM	\$610,740	1	\$611,000		\$611,000
Q ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$2,442,960	1	\$2,443,000		\$2,443,000
R CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$4,580,550	1	\$4,581,000		\$4,581,000
S RIGHT OF WAY	HECTARE	\$600,000	5	\$3,000,000		\$3,000,000

GRAVINA ACCESS PROJECT	OPTION :	G3	- Development	Access		
			FERRY			
	4/45/0000 44 50					
Width Clearing & Grubbing (m) - Wc =	1/15/2002 14:58		Roadway (m) =			Pag
Unit Weight Asphalt (Megagram/m) - Wa =		15+325	19+000	3675		
Unit Weight Aggregate Base Course (Megagram/m) - Wb =	= <u>4.30</u>	0+000	0+000	0		
(ggg	= 23.30	<u>0+000</u>	<u>0+000</u>	0		
	= 40	0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr = Width of Right of Way (m) - Wr =	= <u>14.6</u> = 50	<u>0+000</u>	0+000 Bridges (m) =	0		
Contingency Line O (%) - Co		Length Roa	d - Bridges (m) =			
CONCEPT COST ESTIMATE			# Bridges = 0			
			#Tunnels = 0			
			ert Crossings = 9			
		#Bridge Cr	eek Crossings = 0			TOTAI
	UNITS	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM CO
EARTHWORK						
1. Clearing and Grubbing	HECTARES	\$11,000	12.9	\$142,000	5.0%	\$149,00
2. Rock Excavation	CUBIC METER	\$13	<u>133000</u>	\$1,729,000	25.0%	\$2,161,00
3. Borrow	MEGAGRAM	\$12	85628	\$1,028,000	10.0%	\$1,131,00
SURFACING / PAVING						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	5513	\$248,000	2.5%	\$254,00
2. Aggregate Base Course	MEGAGRAM	\$24	15803	\$379,000	5.0%	\$398,00
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	331	\$66,200	1.0%	\$67,000
STRUCTURES						
1. Bridges (See above for number)	COLLABE SERVICE	40		40	10.007	40
a. Superstructure. b. Substructure	SQUARE METER	<u>\$0</u>	0	\$0	10.0%	\$0
i. Deep Water	LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water	SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land	SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
DRAINAGE						
Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,00
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$0	0.0%	\$0
3. Other Drainage a. Development Access	METER	\$100	3675	\$368,000	15.0%	\$423,00
b. Airport Access	METER	\$100	0	\$0	15.0%	\$423,00
TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
	LUMII SUMI	φ450,000	1	φ230,000	U.U 70	φ430,00
MISCELLANEOUS ROADS	T TIMD CTIM	\$181,500	0	¢0	10.00/	¢o.
Connection to Airport Connection to Ketchikan	LUMP SUM LUMP SUM	\$181,500	0	\$0 \$0	10.0%	\$0 \$0
	LUMI SUM	\$121,000	<u>u</u>	90	10.0 /6	
SUB TOTAL (Lines A, B, D through F)						\$5,040,00
MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$302,400	1	\$302,000		\$302,00
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$151,200	1	\$151,000		\$151,00
3. Miscellanceous Construction Items (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control	LUMP SUM	\$1,260,000	1	\$1,260,000		\$1,260.00
devices, lighting/load centers, etc.)	LUMP SUM	\$1,200,000	1	\$1,200,000		. , ,
SUB TOTAL (Lines G through H)						\$6,753,00
FERRY TERMINAL						
1. Passenger Shelter & Ticket Booth	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
SUB TOTAL (Lines A through F, H & J)						\$6,753,00
MOBILIZATION (10% of Line K)	LUMP SUM	\$675,300	1	\$675,000		\$675,00
				·		•
Ferry System Acquisition Cost	LUMP SUM	<u>\$0</u>	0	\$0	0.0%	\$0
l l						\$7,428,00
SUB TOTAL (Lines K through M)			1	\$1,114,000		\$1,114,0
	I IIMD SIIM	\$1 114 200		φ1,114,UUU		
CONTINGENCIES (15% of Lines N)	LUMP SUM	\$1,114,200			-	
	LUMP SUM LUMP SUM	\$1,114,200 \$148,560	1	\$149,000		\$149,00
CONTINGENCIES (15% of Lines N)				\$149,000 \$594,000		
CONTINGENCIES (15% of Lines N) MITIGATION (2% of Line N) ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM LUMP SUM	\$148,560 \$594,240	1	\$594,000		\$594,00
CONTINGENCIES (15% of Lines N) MITIGATION (2% of Line N)	LUMP SUM	\$148,560	1			\$149,000 \$594,000 \$1,114,00 \$0

GRAVINA ACCESS PROJECT	OPTION	G4	- Airport Acc	055		
GRAVINA ACCESS I ROJECT	Of Hor	34	FERRY	C33		
			FERRY			
Wilds Classica & Constitution (as) Wa	1/15/2002 14:58		D d ()			Page 2
Width Clearing & Grubbing (m) - Wc = Unit Weight Asphalt (Megagram/m) - Wa =		0+000	Roadway (m) 0+000	0		
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		0+000	0+000	0		
Unit Weight Borrow (Megagram/m) - Ws =		0+000	0+000	0		
Length Culvert Crossings (m) - Lc =		0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr = Width of Right of Way (m) - Wr =		<u>0+000</u>	0+000 Bridges (m)	= 0		
Contingency Line O (%) - Co		Length Roa	ad - Bridges (m)			
CONCEPT COST ESTIMATE			# Bridges =	0		
		" "	#Tunnels =	0		
			vert Crossings = eek Crossings =	0		
		"Bridge Cr	cek erossings –	<u> </u>		TOTAL
	<u>UNITS</u>	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM COST
A EARTHWORK	THE CITE A DESC	#11.000		фо	7.00/	40
1. Clearing and Grubbing 2. Rock Excavation	HECTARES CUBIC METER	\$11,000 \$13	0	\$0 \$0	5.0% 25.0%	\$0 \$0
3. Borrow	MEGAGRAM	\$12	0	\$0	10.0%	\$0
B SURFACING / PAVING						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	0	\$0	2.5%	\$0
2. Aggregate Base Course	MEGAGRAM	\$24	0	\$0	5.0%	\$0
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	0	\$0	1.0%	\$0
C STRUCTURES						
1. Bridges (See above for number)						
a. Superstructure.	SQUARE METER	<u>\$0</u>	0	\$0	10.0%	\$0
b. Substructure i. Deep Water	LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water	SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land	SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
D DRAINAGE) COMPA	\$500		40	45.00/	40
Culvert Crossings (See above for number) Bridges needed for creek crossings (See above for number)	METER SQUARE METER	\$500 \$970	0	\$0 \$0	15.0% 0.0%	\$0 \$0
3. Other Drainage	SQUARE METER	\$770	-	φυ	0.0 / 0	φυ
a. Development Access	METER	\$100	0	\$0	15.0%	\$0
b. Airport Access	METER	\$100	0	\$0	15.0%	\$0
E TRAFFIC SERVICES	LUMP SUM	\$250,000	<u>1</u>	\$250,000	0.0%	\$250,000
F MISCELLANEOUS ROADS						
1. Connection to Airport	LUMP SUM	\$181,500	<u>0</u>	\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	<u>0</u>	\$0	10.0%	\$0
G SUB TOTAL (Lines A, B, D through F)						\$250,000
H MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$15,000	1	\$15,000		\$15,000
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure						
excavation and backfill, etc.)	LUMP SUM	\$7,500	1	\$8,000		\$8,000
3. Miscellanceous Construction Items (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control						
devices, lighting/load centers, etc.)	LUMP SUM	\$62,500	1	\$63,000		\$63,000
I SUB TOTAL (Lines G through H)		1.7,7	_	, , , , , , ,		· /
, , , , , , , , , , , , , , , , , , ,						\$336,000
J FERRY TERMINAL	COLLADE METER	\$1,100	200	\$330,000	0.00/	\$330,000
Passenger Shelter & Ticket Booth Earthworks, Surfacing, Paving	SQUARE METER SQUARE METER	\$1,100 \$65	300 8500	\$553,000	0.0%	\$553,000
	SQUILL METER	400	0000	\$225,000	0.070	
K SUB TOTAL (Lines A through F, H & J)						\$1,219,000
L MOBILIZATION (10% of Line K)	LUMP SUM	\$121,900	1	\$122,000		\$122,000
M Ferry System Acquisition Cost	LUMP SUM	\$21,560,000	1	\$21,560,000	0.0%	\$21,560,000
N SUB TOTAL (Lines K through M)						\$22,901,000
× 1 1 1 0 1	I IIMD CYD C	¢2 425 150	1	¢2 425 000		
O CONTENICENCIES (150/ CL: NO	LUMP SUM	\$3,435,150	1	\$3,435,000		\$3,435,000
O CONTINGENCIES (15% of Lines N)			_	\$458,000		\$458,000
O CONTINGENCIES (15% of Lines N) P MITIGATION (2% of Line N)	LUMP SUM	\$458,020	1	\$430,000	+	
	LUMP SUM LUMP SUM	\$458,020 \$1,832,080	1	\$1,832,000		\$1,832,000
P MITIGATION (2% of Line N) Q ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$1,832,080	1	\$1,832,000		
P MITIGATION (2% of Line N)		·				\$1,832,000 \$3,435,000 \$3,000,000

GRAVINA ACCESS PROJECT	OPTION:	G4	- Development	Access		
			FERRY			
	4/45/0000 44:50					D
Width Clearing & Grubbing (m) - Wc	1/15/2002 14:58 = 35		Roadway (m) =	-		Pag
Unit Weight Asphalt (Megagram/m) - Wa	= 1.50	10+000	11+768	1768		
Unit Weight Aggregate Base Course (Megagram/m) - Wb	= 4.30	15+325	19+000	3675		
Unit Weight Borrow (Megagram/m) - Ws	= 23.30	0+000	<u>0+000</u>	0		
Length Culvert Crossings (m) - Lc	= <u>40</u>	0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr	= 14.6	<u>0+000</u>	0+000	0		
Width of Right of Way (m) - Wr = Contingency Line O (%) - Co =	= <u>50</u> = 15.0%	T	Bridges (m) =	<u>0</u>		
CONCEPT COST ESTIMATE	15.0%	Length Roa	# Bridges (m) =	5443		
CONCELL COST ESTIMATE			#Tunnels = 0			
		# Culv	ert Crossings = 9			
			eek Crossings = 0			
						TOTAL
	UNITS	UNIT COST	QUANTITY	COST	CONTINGENCY	ITEM COS
EARTHWORK	**************************************	444.000	10.1	4440000	= 00/	****
1. Clearing and Grubbing	HECTARES	\$11,000 \$13	19.1 191000	\$210,000 \$2,483,000	5.0% 25.0%	\$221,000
2. Rock Excavation 3. Borrow	CUBIC METER MEGAGRAM	\$13 \$12	126822	\$1,522,000	10.0%	\$3,104,00 \$1,674,00
	MEGAGRAM	φ12	120022	\$1,322,000	10.0 /6	\$1,074,00
SURFACING / PAVING						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45 \$24	8165	\$367,000	2.5%	\$376,000
2. Aggregate Base Course	MEGAGRAM	\$24	23405	\$562,000	5.0%	\$590,000
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	490	\$98,000	1.0%	\$99,000
STRUCTURES						
1. Bridges (See above for number)						
a. Superstructure.	SQUARE METER	<u>\$0</u>	0	\$0	10.0%	\$0
b. Substructure	I IIMD CIDA	\$14.700.000	Δ.	¢o.	25.00/	φn
i. Deep Water ii. Shallow Water	LUMP SUM SQUARE METER	\$14,700,000 \$1,615	0	\$0 \$0	25.0% 25.0%	\$0 \$0
ii. Over Land	SQUARE METER	\$1,076	0	\$0 \$0	25.0%	\$0 \$0
2. Moveable Bridge	SQUARE METER	\$1,070	0	\$0	0.0%	\$0 \$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
DRAINAGE		. , ,				**
Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
Curvert Crossings (See above for number) Bridges needed for creek crossings (See above for number)	SQUARE METER	\$970	0	\$180,000	0.0%	\$207,000 \$0
3. Other Drainage	SQUAREMETER	φλίο	•	φ0	0.070	φυ
a. Development Access	METER	\$100	5443	\$544,000	15.0%	\$626,000
b. Airport Access	METER	\$100	0	\$0	15.0%	\$0
TRAFFIC SERVICES	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
	LUMI SUM	\$250,000	<u> </u>	\$250,000	0.0 /6	\$250,000
MISCELLANEOUS ROADS						
1. Connection to Airport	LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0
SUB TOTAL (Lines A, B, D through F)						\$7,147,00
I MISCELLANEOUS ROADWAY ITEMS						
Removal Items (6% of Line G; Items include pavement,						
culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$428,820	1	\$429,000		\$429,000
		,		,		,
2. Other Excavation and Embankment Construction (3% of						
Line G; Items include muck excavation, minor structure	LUMP SUM	\$214,410		\$214,000		\$214,000
excavation and backfill, etc.)	LUMP SUM	\$414,41U	1	\$214,000		\$214,000
3. Miscellanceous Construction Items (25% of Line G; Items						
include w-beam guardrail, guardrail/bridgerail connections,						
SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil,						
geotextiles, riprap, erosion and pollution control/administration,						
construction surveying, traffic maintenance, traffic control	I IIMD CID4	\$1.797.750		¢1 707 000		¢1 707 00
devices, lighting/load centers, etc.)	LUMP SUM	\$1,786,750	1	\$1,787,000		\$1,787,00
SUB TOTAL (Lines G through H)						\$9,577,00
FERRY TERMINAL	 	 	+			
Passenger Shelter & Ticket Booth	SQUARE METER	\$0	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	0	\$0	0.0%	\$0
SUB TOTAL (Lines A through F, H & J)	1					\$9,577,00
, , , , ,						
MOBILIZATION (10% of Line K)	LUMP SUM	\$957,700	1	\$958,000		\$958,000
Ferry System Acquisition Cost	LUMP SUM	\$0	0	\$0	0.0%	\$0
			<u> </u>	Ψ.	2.070	
SUB TOTAL (Lines K through M)			1			\$10,535,00
CONTINGENCIES (15% of Lines N)	LUMP SUM	\$1,580,250	1	\$1,580,000		\$1,580,00
MITIGATION (2% of Line N)	LUMP SUM	\$210,700	1	\$211,000		\$211,000
				· ·		
ENGINEERING/ADMINISTRATION (8% of Line N)	LUMP SUM	\$842,800	1	\$843,000		\$843,000
+		1		1		
CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM	\$1,580,250	1	\$1.580.000		\$1.580.00
CONSTRUCTION MANAGEMENT (11% of Line N)	LUMP SUM HECTARE	\$1,580,250 \$0	27.2	\$1,580,000 \$0		\$1,580,00 \$0

GRAVINA ACCESS PROJECT	OPTION:		1. Connection	to Airport		2. Connection	to Ketchikan
	1/16/2002 8:16			Page 1			Page
			Roadway $(m) =$			Roadway $(m) =$	
				150			100
		0+000	<u>0+000</u>	0	0+000	<u>0+000</u>	0
			ng Bridges (m) =	<u>U</u>		ng Bridges (m) =	<u>"</u>
CONCEPT COST ESTIMATE		Length Koa	d - Bridges (m) = 1 # Bridges = 1	150	Length Roa	d - Bridges (m) = 1 # Bridges = 0	100
CONCEFT COST ESTIMATE			#Tunnels = 1			#Tunnels = 1	
		# Culv	ert Crossings = 0		# Culve	ert Crossings = 0	
			eek Crossings = 1			eek Crossings = 1	
	<u>UNITS</u>	UNIT COST	QUANTITY	COST	UNIT COST	QUANTITY	COST
AB EARTHWORK / SURFACING / PAVING / DRAINAGE	METER		150	\$60,000	\$400	100	\$40,000
D DRAINAGE							
Culvert Crossings (See above for number)	METER		0	\$0	\$500	0	\$0
2. Bridges needed for creek crossings (See above for number)	SQUARE METER			\$0	\$970		\$0
2. Bridges (See above for number)	SQUARE METER			\$0	\$1,300		\$0
K SUB TOTAL (Lines A through F, H & J)			[\$60,000			\$40,000
S RIGHT OF WAY	HECTARE		0.8			0.5	

GRAVINA ACCESS PROJECT		ROADWAY	- UNIT COST	/ METER	REPAVE	- UNIT COST	/ METER
		USING	GIH2				
	1/16/2002 8:26	_		Page 1			Pag
	1/10/2002 0.20	-	Roadway (m) =	1 age 1		Roadway (m) =	1 0
		0+000	0+001	1	0+000	0+000	0
		0+000	0+000	0	0+000	0+000	0
			ng Bridges (m) =	0		ing Bridges (m) =	0
			d - Bridges (m) =	<u> </u>		ad - Bridges (m) =	
CONCEPT COST ESTIMATE			# Bridges = 0			# Bridges = 0	
			#Tunnels = 0			#Tunnels = 0	
Overlay Thickness (m) (to)	= 0.0508	# Culv	ert Crossings = 0		# Culv	vert Crossings = 0	
Unit Weight of Asphalt (megagram/m3) (w)			eek Crossings = 0			eek Crossings = 0	
ome (ogne of 120pmie (megagranismo) ())		"Drings or					
	<u>UNITS</u>	<u>UNIT COST</u>	QUANTITY	<u>COST</u>	UNIT COST	QUANTITY	COST
A EARTHWORK		-					
1. Clearing and Grubbing	HECTARES	\$11,000	0.01	\$110	\$11,000	0	\$0
2. Rock Excavation	CUBIC METER	\$13	0	\$0	\$13	0	\$0
3. Borrow	MEGAGRAM	\$12	$\overline{\overline{0}}$	\$0	\$12	0	\$0
			_	**	T		
B SURFACING / PAVING							
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	1.5	\$68	\$45	1.804	\$81
2. Aggregate Base Course	MEGAGRAM	\$24	4.3	\$103	\$24	0	\$0
3. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	0.1	\$20	\$200	0.11	\$22
D DRAINAGE							
3. Other Drainage							
a. Development Access	METER	\$100	0	\$0	\$100	0	\$0
b. Airport Access	METER	\$100	1	\$100	\$100	0	\$0
Z DEMOLISH							
1. Pavement Planing	SQUARE METER	<u>\$1.7</u>	<u>0</u>	\$0	\$1.7	14.6	\$25
				\$401		\$/meter =	\$130
		LENGTH (m)	1		WIDTH (m)	14.6	
		((costroad)	\$400	()	$\mathbf{\$/m}^2 =$	\$9
			Cost per Mile =	\$643,738		Cost per Mile =	\$14,330

GRAVINA ACCESS PROJECT

1/16/2002 8:16

FERRY - EXPAND EXISTING

\$26,794,000

\$12,326,000

\$39,120,000

\$50,000,000

-\$91,032,851

G4

CONCEPT COST ESTIMATE

Includes - 1) Construction, Ferry Acquisition, and Mobilization (Line N of Cost Sheet) 2) Contingencies (Line O of Cost Sheet)

Constant 2003 Dollars

PROJECT SUMMARY

CONSTRUCTION ANNUAL Roadway Length Roadway Roadway Length Roadway CONSTRUCTION LIFE CYCLE VERTICAL AIRPORT DEVELOP. & PROJECT OPERATIONS & HORIZONTAL Costs Cost/ Costs Cost/ DESCRIPTION OPTION ACCESS ACCESS SUBTOTAL DEVELOPMENT COSTS MAINTENANCE NAVIGABLE NAVIGABLE AIRPORT Mile DEVELOPMENT Mile COSTS COSTS CLEARANCE (ft) CLEARANCE (fi ACCESS ACCESS NO BUILD NB \$0 \$0 \$0 \$0 -\$12,648,617 \$1,070,000 \$0 \$0 185' BRIDGE CLEARANCE -AIRPORT AREA \$141,480,501 \$12,225,657 \$153,706,158 \$193,066,158 -\$164,595,202 \$100,000 550 185 \$3,717,051 1252 \$4,777,966 \$6,432,457 5175 \$2,000,393 C3(a1) 200' BRIDGE CLEARANCE -\$136,688,000 \$12,879,000 \$149,567,000 \$175,000,000 -\$147,294,910 \$100,000 550 \$2,944,000 1137 \$4,167,026 \$7,011,000 5175 C3(a2) AIRPORT AREA 200 \$2,180,311 120' BRIDGE CLEARANCE -C3(b) AIRPORT AREA \$127,387,000 \$12,023,000 \$139,410,000 \$167,000,000 -\$142,212,792 \$100,000 500 120 \$2,474,000 1364 \$2,919,001 \$6,515,000 5175 \$2,026,063 185' BRIDGE CLEARANCE -AIRPORT AREA \$137,368,818 \$12,020,707 \$149,389,525 \$193,036,525 -\$167,876,895 185 \$13,250,933 \$2,025,661 C4(a1) \$100,000 550 \$9,946,368 1208 \$6,513,707 5175 200' BRIDGE CLEARANCE -C4(a2) AIRPORT AREA \$142,099,000 \$12,023,000 \$154,122,000 \$185,000,000 -\$158,536,362 \$100,000 550 200 \$9,524,000 1113 \$13,771,242 \$6,515,000 5175 \$2,026,063 120' BRIDGE CLEARANCE -\$12,023,000 \$5,857,000 D1 \$84,461,000 \$96,484,000 \$116,000,000 -\$100,747,238 \$80,000 500 120 675 \$13,964,337 \$6,515,000 5175 \$2,026,063 AIRPORT AREA 185' BRIDGE CLEARANCE -\$150,273,470 \$8,375,362 \$158,648,832 \$191,794,832 \$120,000 \$10,947,870 \$2,007,131 F3(1) PENNOCK ISLAND -\$167,778,682 550 500 185 60 7046 \$2,500,552 \$4,583,362 3675 200' BRIDGE CLEARANCE -F3(2) PENNOCK ISLAND \$139,458,000 \$8,691,000 \$148,149,000 \$177,000,000 -\$151,151,591 \$120,000 550 500 200 60 \$9,022,000 7553 \$1,922,349 \$4,583,000 3675 \$2,006,972 FERRY - PENNINSULA POINT G2 \$46,049,000 \$0 \$46,049,000 \$58,000,000 -\$99,032,851 \$3,336,000 \$10,251,000 9268 \$1,780,037 \$0 FERRY - DOWNTOWN G3 \$35,729,000 \$3,336,000 3393 \$1,947,529 \$4,583,000 \$2,006,972 \$8,691,000 \$44,420,000 \$56,000,000 -\$97,032,851 \$4,106,000 3675

\$3,336,000

\$0

\$6,690,000

5443

\$1,978,047

Sum Earthwork (A), Surfacing/Paving (B), and Drainage - Other (D3)

Gravina Access Project - Alternative Analysis Matrix

Alternative	Type of Structure		Length of Structure (m)	Travel Distance (m) (Airport to Ketchikan Central Business)	Comparative Travel Time (min)	Runway Approach Zone Infringement	Part 77 Airspace Infringement	Max. Grade	Draft (Below MLLW) (m)	Horizontal Navigable Clearance (m)	Vertical Navigable Clearance (m) (Above MHHW)	Fulfillment of Purpose and Need	Traffic Capacity	Reliability	Emergency Response	Reasonable Comparative Annual O&M Costs	Utilities Impacts	Right of Way Impacts	Section 4(f) and 106 Impacts	Environmental Impacts	New Roadway Construction (m)
C3(a1)	185' CLEARANCE	AIRPORT AREA	<u>1620</u>	9994	14.0	N	<u>Y</u>	<u>8.04%</u>	<u>12.19</u>	<u>167.64</u>	<u>56.39</u>					\$ 100,000					<u>6030</u>
C3(a2)	200' CLEARANCE	AIRPORT AREA	<u>1735</u>	<u>9994</u>	14.0	<u>N</u>	Y	<u>8.00%</u>	<u>12.19</u>	<u>167.64</u>	<u>60.96</u>					<u>\$ 100,000</u>					<u>5915</u>
C3(b)	120' CLEARANCE	AIRPORT AREA	1297	8931	12.0	N	N	8.00%	12.19	152.4	36.58					\$ 100,000					6342
C4(a1)	185' CLEARANCE	AIRPORT AREA	1425	7821	11.0	N	Υ	8.00%	12.19	167.64	56.39					\$ 100,000					5886
C4(a2)	200' CLEARANCE	AIRPORT AREA	1520	7821	11.0	N	Y	8.00%	12.19	167.64	60.96					\$ 100,000					5791
D1	120' CLEARANCE	AIRPORT AREA	980	6663	11.0	N	N	8.00%	12.19	152.4	36.58					\$ 80,000					5353
F3(1)	185' CLEARANCE	PENNOCK ISLAND	853 677	11282	12.0	N	N	8.00%	12.19	167.64 152.4	56.39 18.28					\$ 120,000					12208
F3(1)	200' CLEARANCE	PENNOCK ISLAND		11282	12.0	N	N	8.00%	12.19	167.64 152.4	60.96 18.28					\$ 120,000					12085
			<u>978 677</u>			IN	IN	0.00%	12.19	107.04 152.4	00.90 18.28										
<u>G2</u>	AIRPORT FERRY	PENNINSULA POINT		<u>15450</u>	40.0											\$ 3,336,000					<u>5640</u>
<u>G3</u>	ADDITIONAL FERRY ROUTE	DOWNTOWN EXPAND EXISTING		<u>7210</u> 5472	28.0											\$ 3,336,000 \$ 3,336,000					6166 4546

GRAVINA ACCESS PROJECT

OPTION:	NB	C3(a2)	C3(b)	C4(a2)	D1	F3(2)
1/16/2002 8:16	NO BUILD	200' BRIDGE CLEARANCE -	120' BRIDGE CLEARANCE -	200' BRIDGE CLEARANCE -	120' BRIDGE CLEARANCE -	200' BRIDGE CLEARANCE -
Begin Construction - Y = 2003	2 Ferries	AIRPORT AREA	AIRPORT AREA	AIRPORT AREA	AIRPORT AREA	PENNOCK ISLAND
Life Span (years) - n = $\frac{20}{100}$	1 Route			۔ ا		
Years to Construct - yc = 3 Initial Cost, Distributed over the #	0	2	3	5	6	
of Years to Construct (Y/N) N						
Eff. Real Discount Rate/Yr - i = 4.2%						
Roadway Repaving* (\$/m) = \$205						
Repaving* (\$/m ²) = \$14						
CASH FLOW (Constant 2003 Dollars):						
LIABILITIES:						
nitial Cost of Constr. & Project Development:	<u>o</u>	\$175,000,000	\$167,000,000	\$185,000,000	\$116,000,000	\$177,000,000
Year 2003 to Year 2005 (Beginning of Year)	_					
Annual Operating & Maintenance Costs:	\$1,070,000	\$100,000	\$100,000	\$100,000	\$80,000	\$120,000
Year 2006 to 2025 (End of Year)						
Periodic Maintenance Costs:						
Repaving:	\$109,690	\$1,609,250	\$1,606,995	\$1,539,755	\$1,339,265	\$2,949,335
Frequency (Years):	<u>20</u>	20	20	20	20	20
Length Project (m):	0	7850	7839	7511	6533	14387
Parking Lot (m ²):	<u>7835</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Mechanical/Electrical Equipment Replacement:	\$5,244,000	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
Frequency (Years):	25	1	1	1	1	1
1,,	_	_	_	_	_	_
Terminal Maintenance:	\$3,495,000	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
Frequency (Years):	<u>10</u>	10	10	10	10	10
	40.005.000			•		
Existing Ferry Replacment: Year Ferry 2 Replaced:	<u>\$3,825,000</u>	<u>\$0</u> 10	<u>\$0</u> 10	<u>\$0</u> 10	<u>\$0</u> 10	<u>\$0</u> 10
rear Ferry 2 Replaced:	<u>10</u>	10	10	10	10	10
Ferry Replacement(1):	\$3,825,000	\$0	\$0	\$0	\$0	\$0
Frequency (Years):	<u>50</u>	50	50	50	50	50
EQUITY:						
Salvage Value**:						
*Paving Unit Costs Include: Bridge(s):	\$0	\$74,410,600	\$66,893,933	\$71,212,533	\$41,724,467	\$70,235,733
10% Mobilization Costs include: Construction Cost:	<u>\$0</u> 75	\$101,469,000	\$91,219,000	\$97,108,000	\$56,897,000	\$95,776,000
15% Contingencies Life of Bridge(s):	<u>75</u>	75	75	75	75	75
8% Engineering/Admin						
15% Construction Magmat Parking Garage(S):	\$0	\$0	\$0	\$0	\$0	\$0
Construction Cost:	<u>\$0</u>	\$0 75	\$0 75	\$0 75	\$0 75	\$0 75
**Straight Line Depreciation Life of Parking Garage(s): Method.	<u>75</u>	75	75	75	75	75
Paving/Repaving:	\$0	\$0	\$0	\$0	\$0	\$0
Mechanical/Electrical Equipment/Replacement:	\$1,048,800	\$0	\$0	\$0	\$0	\$0
Terminal Maintenance:	\$0	\$0	\$0	\$0	\$0	\$0
Ferry 1/Replacement Salvage:	\$2,295,000	\$0	\$0	\$0	\$0	\$0
Ferry 2/Replacement Salvage:	\$3,060,000	\$0 *0	\$0 \$0	\$0 \$0	\$0 *0	\$0 \$0
Ferry 3-4/Replacement Salvage: Life of Ferry(s):	\$4,590,000 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50
LIFE CYCLE COST (2003 Dollars):	<u>50</u>	30	30	30	30	30
LII E CTOLL COOT (2003 Dollars).						
,						
LIABILITIES:	**	\$47F 000 000	\$4.07.000.000	\$40F 000 000	£446 000 000	6477 000 000
LIABILITIES: nitial Cost of Constr. & Project Development:	\$0 \$12 628 519	\$175,000,000 \$1,180,235	\$167,000,000 \$1 180 235	\$185,000,000 \$1 180 235	\$116,000,000 \$944,188	\$177,000,000 \$1,416,283
IABILITIES: nitial Cost of Constr. & Project Development: Annual Operating & Maintenance Costs:	\$12,628,519	\$1,180,235	\$1,180,235	\$1,180,235	\$944,188	\$1,416,283
LIABILITIES: nitial Cost of Constr. & Project Development: Annual Operating & Maintenance Costs: Periodic Maintenance Costs: Repaving:	\$12,628,519 \$0	\$1,180,235 \$0	\$1,180,235 \$0	\$1,180,235 \$0	\$944,188 \$0	\$1,416,283 \$0
IABILITIES: nitial Cost of Constr. & Project Development: nnual Operating & Maintenance Costs: Periodic Maintenance Costs: Repaving: Mechanical/Electrical Equipment Replacement:	\$12,628,519	\$1,180,235 \$0 \$0	\$1,180,235 \$0 \$0	\$1,180,235 \$0 \$0	\$944,188 \$0 \$0	\$1,416,283 \$0 \$0
LIABILITIES: nitial Cost of Constr. & Project Development: Annual Operating & Maintenance Costs: Periodic Maintenance Costs: Repaving:	\$12,628,519 \$0 \$0	\$1,180,235 \$0	\$1,180,235 \$0	\$1,180,235 \$0	\$944,188 \$0	\$1,416,283 \$0
IABILITIES: Initial Cost of Constr. & Project Development: Innual Operating & Maintenance Costs: Periodic Maintenance Costs: Mechanical/Electrical Equipment Replacement: Terminal Maintenance: Ferry 1 Replacement (initial replacement not included): Ferry 2 Replacement:	\$12,628,519 \$0 \$0 \$2,047,231	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0
IABILITIES: nitial Cost of Constr. & Project Development: nnual Operating & Maintenance Costs: veriodic Maintenance Costs:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$0
IABILITIES: nitial Cost of Constr. & Project Development: unnual Operating & Maintenance Costs: eriodic Maintenance Costs: Mechanical/Electrical Equipment Replacement: Terminal Maintenance: Ferry 1 Replacement (initial replacment not included): Ferry 2 Replacement: Ferry 3-4 Replacement: TOTAL LIFE CYCLE COST OF LIABILITIES:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$0
IABILITIES: nitial Cost of Constr. & Project Development: nnual Operating & Maintenance Costs: eriodic Maintenance Costs:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$0
IABILITIES: nitial Cost of Constr. & Project Development: unnual Operating & Maintenance Costs: eriodic Maintenance Costs: Mechanical/Electrical Equipment Replacement:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$0 \$16,916,282	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$168,180,235	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$178,416,283
IABILITIES: nitial Cost of Constr. & Project Development: nnual Operating & Maintenance Costs: Periodic Maintenance Costs:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$0 \$16,916,282	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25,967,444	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$27,643,874	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$178,416,283
IABILITIES: nitial Cost of Constr. & Project Development: unnual Operating & Maintenance Costs: Periodic Maintenance Costs:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$0 \$16,916,282	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$168,180,235	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$186,180,235	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$178,416,283 \$27,264,691
IABILITIES: nitial Cost of Constr. & Project Development: unnual Operating & Maintenance Costs: Periodic Maintenance Costs: Repaving: Mechanical/Electrical Equipment Replacement: Terminal Maintenance: Ferry 1 Replacement (initial replacement not included): Ferry 2 Replacement: Ferry 34 Replacement: Ferry 34 Replacement: TOTAL LIFE CYCLE COST OF LIABILITIES: EQUITY: Balvage Value**: Bridge(s): Parking Garage(s): Paving/Repaving:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$16,916,282	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235 \$28,885,326 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$168,180,235 \$25,967,444 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$186,180,235 \$27,643,874 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188 \$16,196,951 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$178,416,283 \$27,264,691 \$0 \$0
IABILITIES: nitial Cost of Constr. & Project Development: Annual Operating & Maintenance Costs: Periodic Maintenance Costs: Mechanical/Electrical Equipment Replacement: Terminal Maintenance: Ferry 1 Replacement (initial replacement not included): Ferry 2 Replacement: Ferry 3-4 Replacement: TOTAL LIFE CYCLE COST OF LIABILITIES: EQUITY: Balvage Value**: Bridge(s): Parking Garage(s):	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$0 \$16,916,282	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$168,180,235	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$186,180,235	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$178,416,283 \$27,264,691
IABILITIES: nitial Cost of Constr. & Project Development: Annual Operating & Maintenance Costs: Periodic Maintenance Costs:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$0 \$16,916,282 \$0 \$0 \$0 \$0 \$407,132	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235 \$28,885,326 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$168,180,235 \$25,967,444 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$186,180,235 \$27,643,874 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188 \$16,196,951 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$178,416,283 \$27,264,691 \$0 \$0
Annual Operating & Maintenance Costs: Periodic Maintenance Costs: Repaving: Mechanical/Electrical Equipment Replacement: Terminal Maintenance: Ferry 1 Replacement (initial replacement not included): Ferry 2 Replacement Ferry 3 4 Replacement: Ferry 3 4 Replacement: TOTAL LIFE CYCLE COST OF LIABILITIES: EQUITY: Balvage Value**: Bridge(s): Parking Garage(s): Paving/Repaving: Mechanical/Electrical Equipment/Replacement: Terminal Maintenance: Ferry 1/Replacement Salvage: Ferry 2/Replacement Salvage:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$16,916,282 \$0 \$0 \$0 \$407,132 \$0 \$890,892 \$1,187,856	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235 \$28,885,326 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$168,180,235 \$25,967,444 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$186,180,235 \$27,643,874 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188 \$16,196,951 \$0 \$0 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$178,416,283 \$27,264,691 \$0 \$0 \$0 \$0 \$0
IABILITIES: nitial Cost of Constr. & Project Development: Annual Operating & Maintenance Costs: Periodic Maintenance Costs: Mechanical/Electrical Equipment Replacement: Terminal Maintenance: Ferry 1 Replacement (initial replacement not included): Ferry 2 Replacement: TOTAL LIFE CYCLE COST OF LIABILITIES: EQUITY: Salvage Value**: Bridge(s): Parking Garage(s): Paving/Repaving: Mechanical/Electrical Equipment/Replacement: Terminal Maintenance: Ferry 1/Replacement Salvage: Ferry 2-4/Replacement Salvage: Ferry 3-4/Replacement Salvage: Ferry 3-4/Replacement Salvage: Ferry 3-4/Replacement Salvage:	\$12,628,519 \$0 \$0,47,231 \$0 \$2,240,532 \$0 \$16,916,282 \$0 \$0 \$0 \$0 \$0 \$407,132 \$0 \$890,892 \$1,187,856 \$1,781,784	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235 \$28,885,326 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$168,180,235 \$25,967,444 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$186,180,235 \$27,643,874 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188 \$16,196,951 \$0 \$0 \$0 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$178,416,283 \$27,264,691 \$0 \$0 \$0 \$0 \$0
IABILITIES: nitial Cost of Constr. & Project Development: unnual Operating & Maintenance Costs: Periodic Maintenance Costs:	\$12,628,519 \$0 \$0 \$2,047,231 \$0 \$2,240,532 \$0 \$16,916,282 \$0 \$0 \$0 \$0 \$0 \$890,892 \$1,187,856 \$1,781,784 \$4,267,665	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235 \$28,885,326 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$168,180,235 \$25,967,444 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$186,180,235 \$27,643,874 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188 \$16,196,951 \$0 \$0 \$0 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$0 \$178,416,283 \$27,264,691 \$0 \$0 \$0 \$0 \$0 \$0
IABILITIES: itital Cost of Constr. & Project Development: nnual Operating & Maintenance Costs: eriodic Maintenance Costs:	\$12,628,519 \$0 \$0,47,231 \$0 \$2,240,532 \$0 \$16,916,282 \$0 \$0 \$0 \$0 \$0 \$407,132 \$0 \$890,892 \$1,187,856 \$1,781,784	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$176,180,235 \$28,885,326 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$0 \$168,180,235 \$25,967,444 \$0 \$0 \$0 \$0 \$0	\$1,180,235 \$0 \$0 \$0 \$0 \$0 \$186,180,235 \$27,643,874 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$944,188 \$0 \$0 \$0 \$0 \$0 \$0 \$116,944,188 \$16,196,951 \$0 \$0 \$0 \$0 \$0	\$1,416,283 \$0 \$0 \$0 \$0 \$0 \$178,416,283 \$27,264,691 \$0 \$0 \$0 \$0 \$0

Average Annual O&M Costs: \$2,093,744.50

The Average Annual O&M Costs is not used in calculating Life Cycle
Costs. The Average Annual O&M Cost includes all initial construction
and project development costs, plus all annual operating and
maintenance costs, plus all periodic maintenance costs.

GRAVINA ACCESS PROJECT

GRAVINA ACCESS	OPTION :	G2	G3	G4
		EEDDY DENNINGLIIA		FERRY - EXPAND
	1/16/2002 8:16	POINT	FERRY - DOWNTOWN	EXISTING
Begin Construction - Life Span (years) -		4 Ferries 2 Routes	4 Ferries 2 Routes	4 Ferries 2 Routes
Years to Construct -	yc = <u>3</u>	9	10	11
Initial Cost, Distributed over to of Years to Construct (
Eff. Real Discount Rate/Yr				
Roadway Repaving* (\$/				
Repaving* (\$/n				
CASH FLOW (Constant 200 LIABILITIES:	03 Dollars):			
Initial Cost of Constr. & Proje	ect Develonment	\$58,000,000	\$56,000,000	\$50,000,000
	ear 2005 (Beginning of Year)		400,000,000	400,000,000
Annual Operating & Maintena		\$3,336,000	\$3,336,000	\$3,336,000
	r 2006 to 2025 (End of Year)			
Periodic Maintenance Costs:	Repaving:	\$1,527,740	\$1,623,475	\$1,213,955
	Frequency (Years):	20	20	20
	Length Project (m):	6134	6601	4995
	Parking Lot (m ²):	<u>19305</u>	<u>19305</u>	<u>13570</u>
Mechanical/Electrical	Equipment Replacement: Frequency (Years):	\$10,488,000 25	\$10,488,000 25	\$10,488,000 25
	, , , ,			_
	Terminal Maintenance: Frequency (Years):	\$6,990,000 10	<u>\$6,990,000</u> 10	<u>\$6,990,000</u> 10
E	xisting Ferry Replacment:	\$3,825,000	\$3,825,000	\$3,825,000
	Year Ferry 2 Replaced:	10	10	10
	Ferry Replacement(1):	\$3,825,000	\$3,825,000	\$3,825,000
	Frequency (Years):	50	50	50
EQUITY:				
Salvage Value**:				
*Paving Unit Costs Include:	Bridge(s): Construction Cost:		\$0 \$0	\$0 \$0
10% Mobilization	Life of Bridge(s):		75	75
15% Contingencies 8% Engineering/Admin.		•	•	•
15% Construction Mngmnt	Parking Garage(s): Construction Cost:		\$0 \$0	\$0 \$0
**Straight Line Depreciation	Life of Parking Garage(s):		75	75
Method.			•	•
Mechanical/Electrical	Paving/Repaving: Equipment/Replacement:	\$0 \$2,097,600	\$0 \$2,097,600	\$0 \$2,097,600
	Terminal Maintenance:	\$0	\$0	\$0
F		\$0.00F.000	\$0.00F.000	\$0.00F.000
	y 1/Replacement Salvage: y 2/Replacement Salvage:	\$2,295,000 \$3,060,000	\$2,295,000 \$3,060,000	\$2,295,000 \$3,060,000
	3-4/Replacement Salvage:	\$4,590,000	\$4,590,000	\$4,590,000
	Life of Ferry(s):	50	50	50
LIFE CYCLE COST (2003 D	onars):			
Initial Cost of Constr. & Project	Dovolonment:	\$58,000,000	\$56,000,000	\$50,000,000
Annual Operating & Maintenance		\$39,372,654	\$39,372,654	\$39,372,654
Periodic Maintenance Costs:	Repaving:	\$0	\$0	\$0
Mechanical/Electrical	Equipment Replacement: Terminal Maintenance:	\$0 \$4,094,462	\$0 \$4,094,462	\$0 \$4,094,462
Ferry 1 Replacement (initial		\$4,034,402	\$0	\$0
,	Ferry 2 Replacement:	\$2,240,532	\$2,240,532	\$2,240,532
TOTAL LIFE CVC	Ferry 3-4 Replacement: LE COST OF LIABILITIES :	\$0 \$103,707,647	\$0 \$101,707,647	\$0 \$95,707,647
EQUITY:	See. C. EINDIE!!/LU.	Ţ.55,. 61,641	\$101,101,041	+00,.01,01
Salvage Value**:				
	Bridge(s):		\$0 \$0	\$0 \$0
	Parking Garage(s): Paving/Repaving:	\$0 \$0	\$0 \$0	\$0 \$0
Mechanical/Electrical	Equipment/Replacement:	\$814,264	\$814,264	\$814,264
_	Terminal Maintenance:	\$0	\$0	\$0
	y 1/Replacement Salvage: y 2/Replacement Salvage:	\$890,892 \$1,187,856	\$890,892 \$1,187,856	\$890,892 \$1,187,856
Ferry	3-4/Replacement Salvage:	\$1,781,784	\$1,781,784	\$1,781,784
TOTAL LIFE	CYCLE COST OF EQUITY:	\$4,674,797	\$4,674,797	\$4,674,797
	OTAL LIFE CYCLE COST :	(\$99,032,851)	(\$97,032,851)	(\$91,032,851)

\$4,989,907.00

\$4,994,693.75

\$4,974,217.75

The Average Annual O&M Costs is not used in calculating Life Cycle Costs. The Average Annual O&M Cost includes all initial construction and project development costs, plus all annual operating and maintenance costs, plus all periodic maintenance costs.

Average Annual O&M Costs: